



EAST BAY
MUNICIPAL UTILITY DISTRICT

RECEIVED

January 30, 2018

2018 FEB -5 AM 9:03

EILEEN M. WHITE
DIRECTOR OF WASTEWATER
(510) 287-1149
eileen.white@ebmud.com

BAY AREA AIR QUALITY
MANAGEMENT DISTRICT

Mr. Wayne Kino, Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn. Title V Reports

Dear Mr. Kino:

RE: Semiannual Major Facility Review (Title V) Monitoring Report for EBMUD
Main Wastewater Treatment Plant (Facility #A0591)

Attached is the semiannual monitoring report for the East Bay Municipal Utility District (EBMUD) Main Wastewater Treatment Plant (Facility #A0591) as required under Section I.F of the facilities Major Facility Review Permit issued December 19, 2012. The report covers the period from July 1 – December 31, 2017. One incident of non-compliance occurred in this reporting period and is noted below. Two additional items of note are also described below.

On Thursday, November 9, 2017, Blue Sky Environmental conducted the initial source test on the new, enclosed digester gas flares A-194 and A-195. The source test report received by EBMUD on January 11, 2018, indicated an exceedance of the NOx limit of 0.06 lb/MMBTU on both flares. The source test results were 0.078 lb NOx/MMBTU for A-194 (flare #1) and 0.089 lb NOx/MMBTU for A-195 (flare #2). The NOx limit appears as item #9 in Condition 18860 in our recently updated Permit to Operate, but has not been incorporated into the Title V permit at this time. EBMUD is not using the new flares currently and has a permit modification request into BAAQMD to raise the NOx limits. EBMUD believes the primary reason for this exceedance is ammonia in the digester gas that is converting to NOx when combusted and was underestimated in the design and manufacturer performance guarantee for the flare emissions.

The monthly turbine testing for NOx and CO was not conducted in July since the turbine was out of service from July 6, 2017 to August 3, 2017. This was due to the inability to operate the turbine gas compressor from overheating of the compressor from an internal mechanical problem. The monthly testing window of 25 to 35 days after the previous test specified in item #8 of Condition 24050 in the Title V permit fell during the time when the turbine was out of service. Monthly testing resumed in August.

Lastly, the two Draeger portable instruments EBMUD uses to measure digester gas hydrogen sulfide were both out of service from June 26, 2017 through September 25,

Wayne Kino, Director of Compliance and Enforcement

January 30, 2018

Page 2

2017 due to faulty sensors. Compliance with item #12 of Condition 18860 from July 1-September 25, 2017 was established using Draeger tube tests and/or an online H2S analyzer that was in use for a pilot study while the portable instruments were being repaired.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this report are true, accurate and complete. If you have any questions, please call Chris Dembicza at (510) 287-0509.

Sincerely,



EILEEN M. WHITE, P.E.

Director of Wastewater

EMW:CD

Attachment

**Major Facility Review (Title V)
Semi-Annual Monitoring Report**

for

**East Bay Municipal Utility District
Main Wastewater Treatment Plant
Facility #A0591**

Reporting Period: July 1, 2017 – December 31, 2017

Source	Monitoring Requirement	Limit	Monitoring Results
S-55 Boiler	<p>Condition 20651</p> <p>2. Shall not operate S-55 boiler when more than two of the three cogen engines S-37, S-38, or S-39 are operating</p> <p>3. Boiler gross heat input</p> <p>5a. NOx emission from boiler 5b. CO emission from boiler</p> <p>18. Daily records of hours of operation, fuel consumption</p> <p>19. Annual performance test for emission limits in 5</p>	<p>20.41 MMBtu/hr</p> <p>30ppm 50ppm</p>	<p>Condition met. See Attachment 1 for boiler and engine data.</p> <p>Condition met. See Attachment 2. Heat input ranged from 5.3-9.8 MMBtu/hr.</p> <p>See 19 for test results if annual tests run in monitoring period</p> <p>See Attachment 1 for hours and gas consumption.</p> <p>Condition met. Annual performance test completed on 12/20/17.</p>
S-37, S-38, S-39 Cogeneration Engines	<p>Condition 20651</p> <p>Emission limits –</p> <p>6. NOx emissions from S-38 7. POC emissions from S-38 8. CO emissions from S-38 9. Filterable particulate emissions from S-38</p> <p>10. NOx emissions from S-37 & S-39 11. CO emissions from S-37 & S-39</p> <p>13. Thermal throughput per engine</p> <p>14. Combined hours of operation for S-37, S-38, and S-39</p> <p>15. Combined diesel consumption for S-37, S-38, and S-39</p>	<p>1.25 g/hp-hr 0.6 g/hp-hr 3.0 g/hp-hr 0.085 g/hp-hr</p> <p>70 ppmvd 2000 ppmvd</p> <p>25 MMBtu/hr</p> <p>25,316 hours in any rolling 365 day period</p> <p>150,000 gallons in any rolling 365 day period</p>	<p>For items 6-11 see 19 for test results if annual tests run in monitoring period</p> <p>Condition met. See Attachment 2.</p> <p>Condition met. 15,544 hours in last year. See Attachment 2. Jul-Dec 2017: 7,828 hours Jan-Jun 2017: 7,716 hours</p> <p>Condition met. 27,448 gallons in last year. See Attachment 2. Jul-Dec 2017: 13,834 gallons Jan-Jun 2017: 13,614 gallons</p>

Source	Monitoring Requirement	Limit	Monitoring Results
S-37, S-38, S-39 Cogeneration Engines (continued)	18. Daily records of hours of operation, fuel consumption 19. Annual performance test for emission limits in 6-11		Condition met. See Attachment 1 for records. Condition met. Annual performance tests completed 9/21/17 for engine #2 and 10/27/17 for engine #3. See Attachment 3 for summary reports.
S-48 Gasoline Dispensing Facility	Condition 25723 The Static Pressure Performance Test (CARB TP 201.3B) shall be successfully conducted at least once in each 12-month period.		Condition met. Completed on 11/6/17. Test results are in Attachment 4.
	Condition 21663 Annual gasoline throughput	334,000 gal per year	Condition met. 26,365 gal in last year. See Attachment 4. Jan-June 2017: 12,542 gal July-Dec 2017: 13,823 gal
S-50 Diesel Engine Back-up Generator	Condition 22830 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 0.1 hours in last 12 months. Refer to Attachment 5.
S-51 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 10.6 hours in last 12 months. Refer to Attachment 5.
S-53 Diesel Engine Back-up Generator	Condition 22830 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 6.8 hours in last 12 months. Refer to Attachment 5.
S-54 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 1 hour in last 12 months. Refer to Attachment 5.

Source	Monitoring Requirement	Limit	Monitoring Results
S-56 Turbine	Condition 24050 2. Total combined heat input 3. NOx emission limits 4. CO emission limit 5. SO2 emission limit 7. Annual turbine source test 8. Monthly NOx and CO test	389,820 MMBtu in any 12-month period 23 ppm (15-min) 34,400 lb (12-mo) 100 ppm (15-min) 92,200 lb (12-mo) 150 ppmv	Condition met. 296,287 MMBtu in last 12 months. Refer to Attachment 2. Jan-Jun 2017: 168,720 MMBtu Jul-Dec 2017: 127,567 MMBtu Emission limits met. Refer to Attachments 2 and 7. Annual mass emission: 4,103 lb Emission limits met. Refer to Attachment 2 and 7. Annual mass emission: 746 lb Emission limit met. Refer to Attachments 2 and 7. Condition met. Turbine annual test done on 12/12/17 by Blue Sky Environmental. Report summary is included in Attachment 3. Condition met. Monthly test results are located in Attachment 7. Note turbine was down from 7/6/17-8/3/17, so no July test was done.
S-58 Diesel Engine Back-up Generator	Condition 22850 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 2.1 hours in last 12 months. Refer to Attachment 5.
S-100 Municipal Wastewater Treatment Plant	Condition 21759 1. Total wastewater flow	120 MGD monthly dry weather average 325 MGD monthly wet weather average	Condition met. Maximum wet weather monthly flow in period was 122 MGD influent. Maximum dry weather monthly flow was 73 MGD. See Attachment 8.

Source	Monitoring Requirement	Limit	Monitoring Results
S-110 Headworks A-461 & A-462 Carbon Bed Scrubbers	Condition 17335 3. Inlet and outlet H ₂ S concentrations of carbon beds, as well as any other appropriate operating parameters shall be continuously monitored and reviewed on a daily basis to determine when carbon adsorption bed breakthrough is imminent or has been reached.		Monitoring results for inlet and outlet H ₂ S and any noted outages are in Attachment 9. Maintenance records for scrubber are in Attachment 10.
S-170 Sludge handling	Condition 18006 1. Monitor and record on a daily basis the activated sewage sludge throughput through S-170.		Sludge throughput is recorded in Attachment 11. Maintenance records for the scrubber are in Attachment 10.
S-180 Anaerobic Digesters Note: A-194, A-195 are enclosed flares A-190, A-191, A-192, and A- 193 are older “candlestick” flares	Condition 18860 2. Monthly inspection of digesters and gas management/venting prevention 3. Sulfur content of digester gas 4. Combined digester gas flow rate to combustion sources 5. Combustion zone temperature monitoring to A-194, A-195 6. Gas flow to A-194, A-195 7. Source testing of A-194, A-195 (every 8,760 hours of use or 5 years)	<200 ppmv annual average <3,400 scfm annual average >1,500F, 3-hr average <3,000 cfm, 1-hr average	Inspections conducted by Operations on daily rounds. No venting incidents in this period. Condition met. Refer to Attachment 12 for the H ₂ S gas sampling records. Condition met. See Attachment 13 for combined digester gas flow rates. Condition met. No 3-hr period of flare use exceeded 1,500F. Condition met. See Attachment 2 for max flow rates. Condition met. Source test conducted 11/9/17 and summary report is in Attachment 3.

Source	Monitoring Requirement	Limit	Monitoring Results
S-180 Anaerobic Digesters (continued)	Emission limits for A-194, A-195 9. NOx limit 10. CO limit 11. H2S limit 12. Weekly sampling and testing of digester gas for H2S 13. Hours of flaring per day	0.06 lb/MMBtu 0.20 lb/MMBtu 0.032 lb/hour	NOx limit exceeded in 11/9/17 source test. CO and H2S limits met. Refer to Attachment 12. Refer to Attachment 1 for the hours of flaring per day.

Attachment Index:

- 1 Combustion Source Air Permit Data
- 2 Combustion Summaries – Boiler, Engines, Turbine, Flares
- 3 Annual Source Test Summaries: Turbine, Boiler, Engine #2, Engine #3, Flare A-194, Flare A-195
- 4 Gasoline Facility Throughput and Static Pressure Performance Test Results
- 5 Hours of Operation for Stand-by Emergency Generators
- 6 Diesel Deliveries with Sulfur Content Certifications
- 7 Turbine Monthly Test Results
- 8 Monthly Wastewater Summary
- 9 IPS Carbon Bed Inlet/Outlet H2S Readings
- 10 Odor Scrubber Maintenance Records for S-170 and S-110
- 11 Activated Sludge Throughput for S-170
- 12 Digester Gas H2S Sampling
- 13 Combined Digester Gas Combustion Volumes

ATTACHMENT 1

COMBUSTION SOURCE AIR PERMIT DATA

(engines, turbine, boiler, flares)

**DAILY REPORTS
JULY - DECEMBER 2017**



July - 2017

Daily Data for Air Permit
Elmer E. Ross Power Station

Date	Run Time, Hours			KiloWatt Hours Generated			Fuel Oil Used, gal			Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	
1st	24	0	24	48	50,948	0	50,431	101,379	30	0	36	66	
2nd	24	0	24	48	44,811	0	46,354	91,165	41	0	38	79	
3rd	24	0	19	43	46,851	0	35,101	81,952	32	0	39	72	
4th	24	0	24	48	45,509	0	46,561	92,070	32	0	42	73	
5th	24	0	13	37	45,034	0	22,448	67,482	34	0	37	71	
6th	24	0	24	48	51,104	0	50,403	101,506	30	0	30	60	
7th	24	0	24	48	50,950	0	52,507	103,457	37	0	41	79	
8th	24	0	24	48	51,018	0	51,296	102,314	33	0	30	63	
9th	24	0	24	48	51,136	0	52,646	103,782	36	0	42	78	
10th	24	0	24	48	50,857	0	51,082	101,939	36	0	31	67	
11th	24	0	24	48	51,006	0	50,800	101,806	35	0	41	76	
12th	24	0	24	48	51,034	0	52,002	103,036	34	0	29	63	
13th	24	0	24	48	51,006	0	51,915	102,921	35	0	42	76	
14th	24	0	24	48	51,017	0	52,238	103,255	17	0	31	48	
15th	24	0	24	48	51,030	0	51,826	102,856	35	0	41	76	
16th	24	0	24	48	51,220	0	52,140	103,360	35	0	29	64	
17th	24	0	24	48	50,666	0	50,109	100,775	35	0	41	76	
18th	24	0	24	48	50,998	0	51,063	102,062	37	0	32	69	
19th	24	0	24	48	50,989	0	51,899	102,889	34	0	38	72	
20th	24	0	24	48	51,050	0	51,769	102,818	35	0	33	68	
21st	24	0	24	48	51,017	0	51,351	102,368	33	0	39	72	
22nd	24	0	24	48	50,953	0	50,310	101,253	34	0	33	68	
23rd	24	0	24	48	49,227	0	51,671	100,898	34	0	38	73	
24th	24	0	24	48	51,038	0	51,761	102,799	35	0	34	69	
25th	24	0	24	48	51,005	0	51,105	102,110	35	0	36	71	
26th	24	0	24	48	51,072	0	50,381	101,453	35	0	35	70	
27th	24	0	24	48	50,957	0	49,248	100,205	33	0	37	70	
28th	24	0	24	48	50,977	0	52,003	102,980	35	0	36	71	
29th	24	0	24	48	51,023	0	51,567	102,620	34	0	36	70	
30th	24	0	24	48	50,997	0	51,309	102,306	36	0	35	71	
31st	24	0	24	48	50,973	0	50,525	101,498	33	0	37	70	
Totals	744	0	728	1,472	1,557,473	0	1,535,838	3,093,312	1,050	0	1,120	2,170	
					Sum of Engines	1,472	Sum of Engines	3,093,312	Sum of Engines	2,170	Sum of Engines	53,193,085	
												Sum of Engines	53,193,085



July - 2017

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193			Flares A-194,195			Turbine			Boiler			Run Time Check		
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Engine Hrs	Eng + Boiler Hrs		
1st	20	559,750	0	0	0	24	83,874	1,421,265	0	0	48	48	48		
2nd	2.1	18,674	0	0	0	24	81,688	1,358,548	0	0	48	48	48		
3rd	3.7	51,132	0	0	0	24	82,440	1,356,641	0	0	43	43	43		
4th	1.5	9,817	0	0	0	24	75,225	1,283,866	0	0	48	48	48		
5th	2.9	32,340	0	0	0	22	75,831	1,281,843	2.3	24,912	37	39	39		
6th	17	1,325,710	0	0	0	10	36,773	643,301	14	170,627	48	62	62		
7th	24	1,368,536	0	0	0	0.6	416	24,442	23	305,679	48	71	71		
8th	24	2,298,735	0	0	0	0	0	0	0	24	341,186	48	72	72	
9th	24	1,384,177	0	0	0	0	0	0	0	24	415,958	48	72	72	
10th	24	1,134,918	0	0	0	0	0	0	0	24	386,550	48	72	72	
11th	24	2,163,609	0	0	0	0	0	0	0	24	371,154	48	72	72	
12th	24	2,341,030	0	0	0	0	0	0	0	24	377,116	48	72	72	
13th	24	2,428,641	0	0	0	0	0	0	0	24	377,130	48	72	72	
14th	24	1,991,107	0	0	0	0	0	0	0	24	379,407	48	72	72	
15th	24	1,791,361	0	0	0	0	0	0	0	24	371,494	48	72	72	
16th	24	850,656	0	0	0	0	0	0	0	24	365,046	48	72	72	
17th	24	1,287,436	1.4	44,646	556	0	0	0	0	6.2	94,981	48	54	54	
18th	24	1,670,721	0	0	0	0	0	0	0	14	179,538	48	62	62	
19th	24	1,761,680	0	0	0	0	0	0	0	24	308,452	48	72	72	
20th	24	1,768,521	0	0	0	0	0	0	0	24	304,176	48	72	72	
21st	24	1,602,028	0	0	0	0	0	0	0	24	325,524	48	72	72	
22nd	24	1,492,855	0	0	0	0	0	0	0	24	350,172	48	72	72	
23rd	24	1,106,206	0	0	0	0	0	0	0	19	256,552	48	67	67	
24th	24	925,140	0	0	0	0	0	0	0	24	293,720	48	72	72	
25th	24	880,258	0	0	0	0	0	0	0	24	292,641	48	72	72	
26th	24	669,120	0	0	0	0	0	0	0	24	293,818	48	72	72	
27th	24	1,257,348	0	0	0	4.3	15,739	269,393	19	225,214	48	67	67		
28th	24	1,244,863	1.4	48,156	582	0	0	0	0	24	290,681	48	72	72	
29th	24	1,157,437	0	0	0	0	0	0	0	24	294,980	48	72	72	
30th	24	475,230	0	0	0	0	0	0	0	24	292,909	48	72	72	
31st	24	521,707	0	0	0	0	0	0	0	24	290,551	48	72	72	
Totals	647	37,560,742	2.8	92,802	133	451,986	7,639,599	577	7,980,170	1,472	2,049	Maximum	582	Minimum	72



August - 2017

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours			KiloWatt Hours Generated			Fuel Oil Used, gal			Gas, FCI Meter, cu ft		
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen. 2	Gen. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
				Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	
1st	24	0	24	48	51,026	0	51,250	102,277	37	0	37	74
2nd	24	0	24	48	51,031	0	51,831	102,862	35	0	41	75
3rd	24	0	24	48	51,000	0	52,178	103,178	39	0	36	76
4th	24	0	24	48	51,025	0	52,052	103,078	35	0	40	75
5th	24	0	24	48	50,280	0	52,825	103,105	42	0	38	80
6th	10	0	24	34	9,175	0	48,805	57,980	33	0	39	72
7th	0	0	23	23	209	0	49,616	49,825	4	0	35	39
8th	23	0	24	47	45,291	0	45,604	90,895	39	0	40	79
9th	24	0	24	48	47,669	0	48,948	96,618	35	0	37	72
10th	24	0	24	48	49,217	0	49,739	98,956	35	0	41	76
11th	24	0	24	48	47,239	0	48,883	96,122	39	0	36	76
12th	24	0	24	48	42,725	0	44,116	86,842	33	0	40	73
13th	24	0	22	46	39,309	0	34,085	73,394	41	0	40	80
14th	24	0	0	24	50,958	0	0	50,958	35	0	35	875,264
15th	24	0	23	47	50,912	0	51,150	102,062	38	0	102	140
16th	24	0	24	48	50,974	0	51,162	102,736	38	0	38	76
17th	24	0	24	48	49,449	0	50,469	99,918	40	0	49	89
18th	24	0	24	48	50,919	0	52,623	103,542	34	0	31	65
19th	24	0	24	48	50,871	0	52,421	103,292	36	0	45	81
20th	24	0	24	48	47,120	0	48,787	95,908	37	0	32	69
21st	24	0	24	48	44,203	0	45,145	89,347	48	0	45	93
22nd	24	0	24	48	50,933	0	52,209	103,142	45	0	35	79
23rd	24	0	24	48	44,526	0	46,211	90,736	35	0	44	79
24th	24	0	24	48	43,115	0	44,609	87,724	49	0	40	89
25th	24	0	24	48	48,942	0	49,909	98,850	34	0	40	74
26th	24	0	24	48	50,488	0	51,765	102,252	33	0	37	70
27th	24	0	20	44	40,204	0	33,283	73,487	52	0	32	84
28th	20	0	0	20	42,856	0	0	42,856	38	0	38	742,734
29th	24	9	0	33	51,017	18,378	0	69,395	34	172	0	207
30th	24	24	0	48	50,271	51,286	0	101,557	34	37	0	71
31st	24	24	0	48	49,715	50,721	0	100,435	37	28	0	65
Totals	701	57	616	1,374	1,402,672	120,385	1,260,273	2,783,330	1,144	237	1,072	2,453
												24,010,505
												2,041,902
												21,650,247
												47,702,654

Sum of Engines 1,374 Sum of Engines 2,783,330 Sum of Engines 2,453 Sum of Engines 2,041,902 Sum of Engines 21,650,247 Sum of Engines 47,702,654



August - 2017

Daily Data for Air Permit
SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193			Flares A-194,195			Turbine			Boiler			Run Time Check		
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Engine Hrs	Eng + Boiler Hrs	Eng + Boiler Hrs	
1st	24	1,267,792	0	0	0	0	0	0	24	287,648	48	48	72	72	
2nd	24	1,488,370	1.5	42,340	484	0	0	0	24	287,792	48	48	72	72	
3rd	24	1,435,148	0	0	0	7	26,780	430,143	17	204,864	48	48	65	65	
4th	24	845,535	0	0	0	24	93,192	1,502,473	0	0	48	48	48	48	
5th	19	261,847	0	0	0	24	93,808	1,483,707	0	0	48	48	48	48	
6th	0	0	0	0	0	24	87,698	1,421,223	0	0	34	34	34	34	
7th	3	35,566	0	0	0	24	88,491	1,469,936	0	0	23	23	23	23	
8th	2	11,328	0	0	0	24	94,735	1,569,382	0	0	47	47	47	47	
9th	1	5,686	0	0	0	24	90,418	1,489,997	0	0	48	48	48	48	
10th	12	231,691	0	0	0	24	94,002	1,522,359	0	0	48	48	48	48	
11th	3	26,318	0	0	0	24	88,389	1,456,531	0	0	48	48	48	48	
12th	1	4,272	0	0	0	24	84,463	1,387,445	0	0	48	48	48	48	
13th	0	0	0	0	0	24	81,389	1,361,852	0	0	46	46	46	46	
14th	2	17,935	0	0	0	24	91,716	1,479,823	0	0	24	24	24	24	
15th	24	1,175,467	0	0	0	0.6	1,988	32,397	17	236,906	47	64	64	64	
16th	24	1,203,161	0	0	0	3	11,056	189,857	21	303,398	48	69	69	69	
17th	24	1,703,596	0	0	0	3	10,108	179,855	21	331,019	48	69	69	69	
18th	24	1,304,346	0	0	0	0	0	0	24	378,020	48	72	72	72	
19th	24	1,195,583	0	0	0	0	215	17,943	24	354,834	48	72	72	72	
20th	19	555,462	0	0	0	7	18,685	339,062	17	227,553	48	65	65	65	
21st	10	188,313	0	0	0	21	64,026	1,091,216	0	0	48	48	48	48	
22nd	23	367,378	0	0	0	23	73,673	1,236,410	1.3	14,381	48	49	49	49	
23rd	6	45,558	0	0	0	24	82,285	1,332,397	0	0	48	48	48	48	
24th	2	14,836	0	0	0	24	83,782	1,369,457	0	0	48	48	48	48	
25th	10	146,036	0	0	0	24	84,024	1,371,164	0	0	48	48	48	48	
26th	18	348,079	0	0	0	24	84,154	1,356,144	0	0	48	48	48	48	
27th	2	13,365	0	0	0	24	84,022	1,346,020	1.2	12,163	44	45	45	45	
28th	15	384,383	0	0	0	24	84,064	1,380,960	22	382,243	20	42	42	42	
29th	21	596,648	0	0	0	24	83,988	1,368,874	16	310,746	33	49	49	49	
30th	21	274,679	0	0	0	24	83,904	1,363,541	0	0	48	48	48	48	
31st	20	759,572	0	0	0	24	83,816	1,371,735	2.6	30,967	48	51	51	51	
Totals	426	15,908,173	1.5	42,340	544	1,948,870	31,931,202	233	3,361,634	1,374	1,607	72	72	72	72

Minimum

Maximum



September - 2017

Daily Data for Air Permit
Elmer E. Ross Power Station

Date	Run Time, Hours			Kilowatt Hours Generated			Fuel Oil Used, gal			Gas, FCI Meter, cu ft		
	Eng 1	Eng 2	Eng 3	Total	Gen 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	24	24	0	48	46,714	47,681	0	94,395	36	28	0	64
2nd	24	24	0	48	44,644	45,410	0	90,054	41	66	0	107
3rd	1	22	0	23	0	39,330	0	39,330	1	40	0	41
4th	6	17	0	23	11,015	33,180	0	44,194	43	36	0	79
5th	0	24	0	24	0	46,595	0	46,595	0	28	0	28
6th	23	24	0	47	43,467	45,199	0	88,666	45	37	0	81
7th	24	24	0	48	50,977	51,971	0	102,948	35	28	0	64
8th	24	24	0	48	50,990	51,995	0	102,985	40	33	0	72
9th	24	24	0	48	48,619	49,620	0	98,239	38	30	0	68
10th	3	24	0	27	3,117	50,254	0	53,371	8	27	0	35
11th	0	15	0	15	0	30,035	0	30,035	0	45	0	45
12th	11	24	0	35	25,297	51,795	0	77,092	45	28	0	73
13th	24	24	0	48	51,081	52,120	0	103,201	37	34	0	71
14th	24	24	0	48	49,232	50,228	0	99,460	37	32	0	69
15th	24	24	0	48	50,790	51,818	0	102,608	39	30	0	69
16th	18	24	0	42	34,839	48,946	0	83,785	38	34	0	71
17th	0	17	0	17	0	36,008	0	36,008	0	58	0	58
18th	12	24	0	36	24,338	48,846	0	73,183	35	33	0	68
19th	23	24	0	47	47,605	48,568	0	96,173	35	31	0	66
20th	22	24	0	46	38,947	46,700	0	85,647	65	29	0	94
21st	24	24	0	48	50,275	51,642	0	101,917	41	33	0	73
22nd	24	24	0	48	50,032	51,045	0	101,077	37	31	0	68
23rd	23	24	0	47	43,616	48,023	0	91,639	43	31	0	75
24th	0	22	0	22	0	45,296	0	45,296	0	39	0	39
25th	8	19	0	27	15,327	35,372	0	50,700	31	50	0	81
26th	24	24	0	48	41,527	43,229	0	84,756	43	40	0	83
27th	20	24	7	51	34,152	45,560	13,179	92,890	30	28	71	129
28th	0	24	24	48	0	45,936	45,643	91,580	0	34	50	84
29th	0	24	24	48	0	52,051	49,539	101,591	0	31	30	61
30th	0	24	22	46	0	49,789	42,625	92,424	0	32	53	85
Totals	434	688	77	1,199	856,597	1,394,257	150,987	2,401,840	841	1,055	204	2,100
												Sum of Engines 2,100
												Sum of Engines 41,775,700
												Sum of Engines 41,775,700



September - 2017

Daily Data for Air Permit
SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193			Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power kWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs	
1st	23	709,434	0	0	0	23	76,608	1,280,127	1.6	19,683	48	50	
2nd	18	321,368	0	0	0	24	83,278	1,377,684	0	0	48	48	
3rd	11	160,632	0	0	0	24	83,914	1,349,564	2.4	35,302	23	25	
4th	18	300,817	0	0	0	17	59,076	1,012,518	1.3	175,580	23	36	
5th	14	202,525	0	0	0	24	83,988	1,392,983	0	0	24	24	
6th	15	150,719	0	0	0	24	84,082	1,382,373	0	0	47	47	
7th	24	763,125	0	0	0	24	83,752	1,377,881	0	0	48	48	
8th	24	818,093	0	0	0	24	83,823	1,360,125	0	0	48	48	
9th	16	240,390	0	0	0	24	84,218	1,355,576	0	0	48	48	
10th	15	181,186	0	0	0	24	83,470	1,364,817	0	0	27	27	
11th	22	452,998	0	0	0	24	83,509	1,403,082	4.4	57,491	15	19	
12th	20	379,459	0	0	0	24	84,056	1,381,648	0	0	35	35	
13th	24	591,435	0	0	0	24	83,934	1,361,844	0	0	48	48	
14th	17	379,545	0	0	0	24	84,053	1,365,457	0	0	48	48	
15th	21	469,134	0	0	0	24	84,187	1,375,060	0	0	48	48	
16th	17	239,576	0	0	0	24	83,981	1,386,481	0	0	42	42	
17th	19	284,753	0	0	0	24	82,904	1,383,225	6.6	78,932	17	24	
18th	13	142,205	0	0	0	24	84,013	1,418,875	0	0	36	36	
19th	16	143,718	0	0	0	24	84,063	1,403,411	0	0	47	47	
20th	17	200,307	0	0	0	24	84,133	1,396,993	0	0	46	46	
21st	22	617,912	0	0	0	24	83,833	1,397,987	0	0	48	48	
22nd	21	672,515	0	0	0	24	83,843	1,368,392	0	0	48	48	
23rd	15	187,273	0	0	0	24	83,793	1,405,181	0	0	47	47	
24th	19	292,802	0	0	0	24	84,190	1,399,469	2.1	29,945	22	24	
25th	14	258,179	0	0	0	24	84,121	1,419,228	5.7	107,565	27	33	
26th	7,8	68,229	0	0	0	24	83,891	1,396,560	0	0	48	48	
27th	19	246,315	0	0	0	24	84,070	1,393,461	0	0	51	51	
28th	16	231,316	0	0	0	24	84,039	1,375,923	0	0	48	48	
29th	23	849,691	0	0	0	24	84,041	1,368,957	0	0	48	48	
30th	20	471,588	0	0	0	24	83,996	1,368,334	0	0	46	46	
Totals	541	11,027,336	0.0	0	0	712	2,484,799	41,023,204	36	504,497	1,199	1,235	
											Maximum	51	
											Minimum	51	



October - 2017

Daily Data for Air Permit
Elmer E. Ross Power Station

Date	Run Time, Hours			KiloWatt Hours Generated			Fuel Oil Used, gal			Gas, FCI Meter, cu ft							
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	
1st	0	21	0	21	0	42,419	0	42,419	0	60	0	60	0	764,428	0	764,428	0
2nd	10	19	0	29	21,213	36,083	631	57,927	40	73	47	159	374,395	636,849	11,142	1,022,386	
3rd	24	24	0	48	49,105	50,085	0	99,190	32	34	0	66	846,123	863,012	0	1,709,135	
4th	24	24	1	49	49,766	51,057	360	101,182	52	28	29	109	843,682	865,511	6,103	1,715,356	
5th	24	24	0	48	50,963	51,951	0	102,914	38	28	0	65	854,718	871,279	0	1,725,996	
6th	24	24	0	48	51,010	52,030	0	103,040	40	35	0	75	868,586	868,589	0	1,720,184	
7th	24	24	0	48	50,983	52,047	0	103,040	36	29	0	65	887,204	874,918	0	1,732,122	
8th	24	24	0	48	51,075	52,106	0	103,181	40	32	0	73	861,940	879,330	0	1,741,270	
9th	24	24	0	48	50,972	52,030	0	103,002	36	30	0	66	889,523	887,584	0	1,757,107	
10th	24	24	0	48	49,878	50,920	0	100,798	18	33	0	51	856,541	874,440	0	1,730,981	
11th	24	24	0.5	49	46,531	48,519	549	95,599	54	33	58	146	803,651	837,977	9,483	1,661,111	
12th	24	24	1.5	50	49,127	51,858	1,176	102,161	41	32	49	123	837,375	883,921	20,039	1,741,334	
13th	23	24	0	47	45,577	51,485	0	97,062	47	31	0	78	759,179	857,594	0	1,616,773	
14th	20	24	0	44	42,573	51,377	0	93,950	40	30	0	71	711,553	858,701	0	1,570,254	
15th	4	24	0	28	5,197	42,494	0	47,691	27	63	0	90	94,023	768,824	0	862,947	
16th	9	14	7	30	19,409	30,662	13,177	63,248	55	28	67	150	333,984	527,628	226,750	1,088,362	
17th	24	0	24	48	51,074	0	48,215	99,289	40	0	36	76	861,509	0	813,275	1,674,783	
18th	24	0	24	48	51,005	0	49,594	100,599	38	0	32	70	848,814	0	825,324	1,674,138	
19th	16	9	24	49	31,500	20,100	49,064	100,665	18	32	33	83	528,616	337,310	823,358	1,689,284	
20th	0	24	24	48	0	51,332	49,314	100,646	0	33	38	71	0	867,442	833,346	1,700,788	
21st	0	24	24	48	0	51,785	48,807	100,392	0	32	31	64	0	769,584	722,358	1,491,942	
22nd	0	5	24	29	0	7,305	46,946	54,251	0	10	39	49	0	154,731	994,726	1,449,517	
23rd	0	5	24	29	0	9,681	44,173	53,854	0	8	32	40	0	155,602	710,016	865,617	
24th	0	13	24	37	0	22,749	45,839	68,588	0	27	42	69	0	355,738	716,863	1,072,621	
25th	0	24	24	48	0	51,885	47,166	99,052	0	27	34	61	0	875,282	795,659	1,670,921	
26th	0	24	24	48	0	52,163	48,613	100,776	0	37	40	77	0	883,234	823,133	1,706,367	
27th	12	12	24	48	25,920	24,784	48,508	99,212	51	22	35	108	435,976	416,889	815,889	1,668,724	
28th	24	0	24	48	51,081	0	49,294	100,375	43	0	32	75	849,980	0	820,257	1,670,237	
29th	24	0	16	40	46,107	0	27,063	73,170	38	0	55	93	790,182	0	463,793	1,253,975	
30th	24	11	0	35	46,665	21,298	0	67,963	33	43	0	77	811,225	370,249	0	1,181,474	
31st	24	24	0	48	44,262	43,702	0	87,964	41	62	0	103	772,449	762,882	0	1,535,131	
Totals	478	541	314	1,333	981,004	1,123,907	618,290	2,723,201	898	933	730	2,561	16,654,227	19,069,327	10,431,514	46,155,167	
Sum of Engines	1,333				Sum of Engines	2,723,201				Sum of Engines	2,561			Sum of Engines	2,561	Sum of Engines	2,561



October - 2017

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193			Flares A-194,195			Turbine			Boiler			Run Time Check		
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Engine Hrs	Eng + Boiler Hrs	Eng + Boiler Hrs	
1st	20	314,198	0	0	0	24	84,095	1,392,473	4.0	46,545	21	25			
2nd	19	282,271	0	0	0	24	83,931	1,428,417	5.1	63,811	29	34			
3rd	20	226,823	0	0	0	24	83,897	1,391,715	0	0	48	48			
4th	23	541,515	0	0	0	23	80,429	1,311,886	0	0	49	49			
5th	24	1,675,222	0	0	0	0	0	0	0	0	48	48			
6th	24	1,425,632	0	0	0	0	0	0	0	0	48	48			
7th	24	1,287,825	0	0	0	0	0	0	0	0	48	48			
8th	24	697,975	0	0	0	0	0	0	0	0	48	48			
9th	22	700,444	0	0	0	0	0	0	0	0	48	48			
10th	23	671,702	0	0	0	13	43,096	723,473	0	0	48	48			
11th	13	132,101	0	0	0	24	84,051	1,385,248	0	0	49	49			
12th	20	625,735	0	0	0	24	84,137	1,391,061	0	0	50	50			
13th	23	1,084,056	0	0	0	24	84,013	1,353,237	0	0	47	47			
14th	22	577,304	0	0	0	24	83,940	1,365,173	0	0	44	44			
15th	17	280,999	0	0	0	24	83,568	1,401,661	1.9	24,830	28	30			
16th	21	297,170	0	0	0	24	83,936	1,423,766	0	0	30	30			
17th	24	667,369	0	0	0	24	84,040	1,398,529	0	0	48	48			
18th	24	624,364	0	0	0	24	83,751	1,377,074	0	0	48	48			
19th	24	726,575	0	0	0	24	83,885	1,389,486	0	0	49	49			
20th	16	126,811	0	0	0	24	84,192	1,383,031	0	0	48	48			
21st	23	232,388	0	0	0	24	84,010	1,391,228	0	0	48	48			
22nd	21	368,000	0	0	0	24	84,005	1,391,957	0	0	29	29			
23rd	17	261,758	0	0	0	24	84,002	1,409,368	0	0	29	29			
24th	21	324,215	0	0	0	24	84,000	1,411,923	0	0	37	37			
25th	24	466,335	0	0	0	24	84,003	1,404,143	0	0	48	48			
26th	24	783,653	0	0	0	24	84,004	1,376,681	0	0	48	48			
27th	24	718,660	2.4	52,005	502	24	83,877	1,385,996	0	0	48	48			
28th	23	281,162	0	0	0	24	83,873	1,358,412	0	0	48	48			
29th	12	185,761	0	0	0	24	84,026	1,365,387	0	0	40	40			
30th	18	179,457	0	0	0	24	84,043	1,384,734	0	0	35	35			
31st	11	124,739	0.7	20,480	534	24	83,959	1,392,949	0	0	48	48			
Totals	644	16,902,188	3.1	72,485		612	2,138,763	35,389,008	11	135,186	1,333	1,344			
											Maximum	534	Minimum	50	

November - 2017

EBRAUD
EBRAUD

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours			KiloWatt Hours Generated			Fuel Oil Used, gal			Gas, FCI Meter, cu ft						
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	
1st	24	19	0	43	48,508	36,556	0	85,063	35	27	0	62	829,446	626,071	0	1,454,517
2nd	24	24	0	48	48,802	49,857	0	98,658	36	30	0	66	835,442	853,501	0	1,688,942
3rd	24	24	0	48	48,661	49,698	0	98,359	35	26	0	60	832,615	850,360	0	1,682,974
4th	18	24	0	42	34,559	49,798	0	84,357	41	35	0	75	580,068	850,248	0	1,440,317
5th	0	25	10	36	0	49,389	18,060	67,449	0	25	62	87	0	854,387	312,428	1,166,814
6th	12	24	1	37	24,416	48,386	1,368	74,170	28	35	103	166	404,252	801,119	22,649	1,228,020
7th	23	1	24	48	47,390	0	44,536	91,926	37	0	35	72	812,823	0	763,853	1,576,686
8th	24	0	24	48	50,993	0	47,733	98,726	35	0	32	67	868,684	0	813,155	1,681,839
9th	24	6	9	39	50,332	13,953	16,918	81,202	36	30	20	86	848,723	235,279	285,271	1,369,272
10th	8	24	15	47	12,510	50,244	30,694	93,449	47	31	41	118	216,113	867,965	530,239	1,614,317
11th	0	24	22	46	0	47,357	39,009	86,366	0	32	36	68	0	838,266	690,562	1,528,769
12th	0	24	7	31	0	47,641	10,411	58,051	0	27	44	72	0	843,168	184,250	1,027,417
13th	0	24	14	38	0	50,603	27,384	77,988	0	32	32	64	0	884,656	478,741	1,363,397
14th	0	24	24	48	0	50,512	47,475	97,986	0	29	32	62	0	877,870	825,092	1,702,962
15th	0	24	23	47	0	47,139	42,509	89,648	0	29	67	96	0	824,698	743,697	1,568,395
16th	0	24	24	48	0	52,154	47,571	99,725	0	30	27	56	0	905,944	826,349	1,732,293
17th	12	13	24	49	25,115	25,125	46,347	96,587	19	15	44	78	431,398	431,565	796,099	1,639,062
18th	22	0	24	46	45,579	0	47,338	92,916	38	0	35	74	782,159	0	812,341	1,594,500
19th	0	0	20	20	0	0	38,835	38,835	0	0	35	35	0	0	675,960	675,960
20th	14	0	12	26	31,426	0	23,287	54,713	23	0	37	61	541,814	0	401,493	943,307
21st	24	0	24	48	48,294	0	46,317	94,611	33	0	30	63	821,513	0	797,485	1,628,998
22nd	24	0	24	48	51,057	0	48,338	99,395	38	0	29	67	862,495	0	816,562	1,679,057
23rd	24	0	18	42	47,727	0	35,124	82,851	37	0	34	71	805,721	0	592,960	1,398,671
24th	24	0	7	31	44,858	0	11,808	56,667	37	0	10	47	778,114	0	204,829	982,943
25th	24	0	13	37	50,665	0	26,303	76,968	35	0	49	84	858,219	0	445,547	1,303,766
26th	24	0	3	27	49,425	0	4,095	53,521	37	0	6	43	830,924	0	68,852	899,776
27th	24	0	12	36	46,896	0	23,441	70,337	38	0	43	81	813,903	0	406,838	1,220,741
28th	24	0	22	46	47,239	0	42,050	89,299	53	0	36	89	802,377	0	714,417	1,516,794
29th	24	0	24	48	49,552	0	47,743	97,295	35	0	24	60	843,767	0	812,954	1,656,721
30th	24	0	22	46	48,552	0	41,676	90,228	68	0	48	116	825,587	0	708,665	1,534,252
Totals	469	328	446	1,243	952,557	668,410	856,381	2,477,348	821	432	994	2,247	16,246,156	11,544,096	14,731,227	42,521,479

Sum of Engines 1,243

Sum of Engines 2,477,348

Sum of Engines 42,521,479

Sum of Engines 1,2247

November - 2017

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler



Date	Flares A-190,191,192,193			Flares A-194,195			Turbine			Boiler			Run Time Check		
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Engine Hrs	Eng + Boiler Hrs		
1st	22	281,464	0	0	0	24	83,963	1,396,370	0	0	43	43			
2nd	19	247,089	0	0	0	24	83,565	1,363,327	0	0	48	48			
3rd	22	209,984	0	0	0	24	83,896	1,385,560	0	0	48	48			
4th	21	426,916	0	0	0	24	84,065	1,351,923	0	0	42	42			
5th	20	233,713	0	0	0	25	87,557	1,433,042	0	0	35	35			
6th	22	525,352	0	0	0	19	65,966	1,091,160	3.0	41,446	37	40			
7th	22	593,092	0	0	0	15	50,843	859,978	4.9	62,864	48	53			
8th	23	632,100	1.7	49,091	674	24	83,849	1,385,341	0	0	48	48			
9th	24	669,815	8.3	386,069	924	24	83,807	1,395,814	0	0	39	39			
10th	20	379,306	0	0	0	24	82,414	1,395,958	0	0	47	47			
11th	22	297,584	0	0	0	24	80,271	1,322,397	0	0	46	46			
12th	16	169,230	0	0	0	24	80,655	1,357,012	0	0	31	31			
13th	19	330,815	0	0	0	24	80,280	1,353,598	0	0	38	38			
14th	19	159,802	0	0	0	24	79,475	1,327,656	0	0	48	48			
15th	21	137,965	0	0	0	24	80,274	1,345,420	0	0	47	47			
16th	22	348,085	0	0	0	24	79,296	1,323,834	0	0	48	48			
17th	24	654,769	0	0	0	24	79,322	1,325,552	0	0	49	49			
18th	23	519,528	0	0	0	24	79,025	1,327,593	0	0	46	46			
19th	21	189,735	0	0	0	24	79,614	1,323,389	3.9	49,550	20	24			
20th	23	431,974	0	0	0	24	81,532	1,379,277	9.1	133,499	26	35			
21st	22	451,326	0	0	0	24	81,766	1,361,962	0	0	48	48			
22nd	24	867,431	0	0	0	24	81,246	1,371,454	0	0	48	48			
23rd	20	303,282	0	0	0	24	78,148	1,308,859	0	0	42	42			
24th	20	211,972	0	0	0	24	77,652	1,322,716	0	0	31	31			
25th	24	369,411	0	0	0	24	78,940	1,301,939	0	0	37	37			
26th	21	200,635	0	0	0	24	78,154	1,334,274	0	0	27	27			
27th	19	250,883	0	0	0	21	69,120	1,185,442	3.0	43,877	36	39			
28th	23	913,443	0	0	0	14	44,067	757,302	7.1	109,646	46	53			
29th	22	427,924	0	0	0	24	78,678	1,309,618	0	0	48	48			
30th	23	446,642	0	0	0	24	78,772	1,321,853	0	0	46	46			
Totals	646	11,881,234	10.0	435,160	694	2,336,031	39,019,623	31	440,922	1,243	1,274				
						Maximum	924	Minimum	53	Maximum	53				



December - 2017

Daily Data for Air Permit
Elmer E. Ross Power Station

Date	KiloWatt Hours Generated						Fuel Oil Used, gal						Gas, FCI Meter, cu ft						
	Eng 1	Eng 2	Eng 3	Total	Gen 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total			
1st 24	0	21	45	49,483	0	40,012	89,495	49	0	41	89	844,963	0	0	0	683,227	1,528,190		
2nd 24	0	17	41	47,919	0	31,520	79,439	40	0	77	116	816,708	0	0	0	537,215	1,353,923		
3rd 19	0	2	21	36,101	0	5,472	41,573	44	0	25	69	608,485	0	0	0	92,234	700,719		
4th 24	0	24	48	47,660	0	45,352	93,012	38	0	31	69	818,954	0	0	0	779,300	1,538,254		
5th 24	0	24	48	50,899	0	47,184	98,083	40	0	34	74	881,386	0	0	0	817,061	1,698,447		
6th 24	0	24	48	51,103	0	48,340	99,443	41	0	30	71	871,087	0	0	0	823,976	1,695,063		
7th 24	0	24	48	51,093	0	48,841	99,934	37	0	41	78	864,562	0	0	0	826,473	1,691,056		
8th 24	0	24	48	50,987	0	48,165	99,152	43	0	31	74	869,394	0	0	0	821,269	1,690,663		
9th 24	0	24	48	48,715	0	46,641	95,357	38	0	42	81	845,786	0	0	0	809,772	1,695,557		
10th 4	0	24	28	4,832	0	45,929	50,761	10	0	36	45	863,226	0	0	0	820,570	906,896		
11th 0	0	24	24	0	0	45,472	45,472	0	0	36	0	866,029	0	0	0	815,029	815,029		
12th 16	0	24	40	31,146	0	44,593	75,739	65	0	40	105	555,563	0	0	0	795,450	1,351,034		
13th 24	0	24	48	44,037	0	43,523	87,560	38	0	35	73	783,318	0	0	0	774,171	1,557,489		
14th 24	0	24	48	50,586	0	48,414	99,000	41	0	33	75	858,370	0	0	0	821,517	1,679,887		
15th 24	0	24	48	44,026	0	44,758	88,784	48	0	31	79	770,880	0	0	0	783,687	1,554,568		
16th 24	0	24	48	49,219	0	46,331	95,550	43	0	40	83	850,232	0	0	0	800,336	1,650,568		
17th 10	0	24	34	16,465	0	44,824	61,289	20	0	28	48	290,512	0	0	0	790,904	1,081,416		
18th 13	0	11	24	29,663	0	20,940	50,1603	38	0	51	89	514,914	0	0	0	363,500	878,414		
19th 24	0	24	48	46,391	0	45,826	94,217	48	0	28	75	845,184	0	0	0	800,397	1,645,582		
20th 24	0	24	48	49,413	0	46,867	96,279	39	0	43	83	851,786	0	0	0	807,897	1,659,683		
21st 24	0	24	48	48,662	0	46,540	95,202	44	0	30	74	840,337	0	0	0	803,708	1,644,045		
22nd 24	0	24	48	50,862	0	47,459	98,321	40	0	40	81	875,971	0	0	0	817,368	1,693,339		
23rd 24	0	24	48	46,858	0	42,807	89,665	44	0	38	82	824,385	0	0	0	753,107	1,577,492		
24th 13	0	0	13	19,929	0	0	19,929	50	0	50	50	350,354	0	0	0	350,354	350,354		
25th 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
26th 15	0	12	27	30,995	0	19,693	50,688	45	0	22	68	533,620	0	0	0	339,043	872,663		
27th 24	0	20	44	49,789	0	41,292	91,081	38	0	56	94	860,565	0	0	0	713,715	1,574,280		
28th 24	0	24	48	50,932	0	49,021	99,973	48	0	40	88	860,224	0	0	0	827,622	1,687,846		
29th 24	0	24	48	50,937	0	49,088	100,025	39	0	34	74	860,201	0	0	0	828,984	1,689,185		
30th 21	0	15	36	37,556	0	26,578	64,134	52	0	37	90	654,485	0	0	0	463,173	1,117,658		
31st 14	0	1	15	30,564	0	952	31,517	52	0	37	89	512,888	0	0	0	15,982	528,880		
Totals	605	0	603	1,208	1,218,841	0	1,162,434	2,381,276	1,213	0	1,080	2,303	21,001,491	0	0	0	20,126,668	41,128,181	
Sum of Engines	1,208				2,381,276									Sum of Engines	2,303			Sum of Engines	41,128,181



EBMUD

December - 2017

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193	Flares A-194,195	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Turbine	Boiler	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Eng + Boiler Hrs	Run Time Check
1st	19	284,799	0	0	24	79,168	1,307,020	0	0	45	0	45	45	45	
2nd	17	285,026	0	0	24	83,378	1,361,298	0	0	41	0	41	41	41	
3rd	14	158,509	0	0	21	74,455	1,203,110	8	124,012	21	0	21	29	29	
4th	15	577,745	0	0	0	0	0	0	24	355,276	48	48	72	72	
5th	24	1,403,545	0	0	0	0	0	0	24	340,517	48	48	72	72	
6th	24	2,243,833	0	0	0	0	0	0	24	340,005	48	48	72	72	
7th	24	2,311,176	0	0	0	0	0	0	24	364,866	48	48	72	72	
8th	24	1,866,405	0	0	0	0	0	0	24	371,186	48	48	72	72	
9th	20	1,031,367	0	0	8	31,806	518,045	16	250,598	48	48	64	64		
10th	15	133,411	0	0	24	102,271	1,640,099	0	0	28	0	28	28	28	
11th	16	243,851	0	0	24	101,693	1,665,704	0	0	24	0	24	24	24	
12th	17	234,359	0	0	24	99,654	1,584,330	3	49,130	40	40	43	43		
13th	15	130,525	0	0	24	101,646	1,609,109	0	0	0	0	0	0	0	
14th	21	332,533	0	0	24	105,966	1,649,630	0	0	48	0	48	48	48	
15th	14	77,447	0	0	24	90,540	1,418,184	0	0	48	0	48	48	48	
16th	23	524,583	0	0	24	99,389	1,590,964	0	0	48	0	48	48	48	
17th	8	46,835	0	0	24	98,639	1,544,921	0	0	34	0	34	34	34	
18th	16	168,336	0	0	24	104,365	1,635,404	9	142,183	24	24	33	33		
19th	16	155,641	0	0	24	103,127	1,601,716	0	0	48	0	48	48	48	
20th	22	345,351	0	0	24	106,393	1,665,347	4	63,851	48	48	52	52		
21st	17	182,988	0	0	24	100,965	1,577,908	0	0	48	0	48	48	48	
22nd	22	278,659	0	0	24	107,645	1,693,731	0	0	48	0	48	48	48	
23rd	15	180,896	0	0	24	103,809	1,622,445	0	0	48	0	48	48	48	
24th	9	86,194	0	0	24	102,241	1,603,863	13	170,459	13	13	26	26		
25th	5	45,541	0	0	24	98,475	1,573,960	24	343,996	0	0	24	24		
26th	13	432,267	0	0	17	68,671	1,097,472	15	222,886	27	27	42	42		
27th	23	489,114	0	0	24	106,284	1,654,502	0	0	44	0	44	44	44	
28th	24	535,660	0	0	24	105,205	1,622,585	0	0	48	0	48	48	48	
29th	22	339,224	0	0	24	105,725	1,629,882	0	0	48	0	48	48	48	
30th	9	75,816	0	0	24	100,057	1,547,927	2	22,416	36	36	38	38		
31st	7	108,746	0	0	24	100,982	1,596,848	9	135,420	15	15	24	24		
Totals	531	15,310,276	0	0	597	2,483,189	39,216,066	224	3,302,781	1,208	1,432	Maximum	72	Minimum	72

Attachment 2 - Combustion Device Summaries

**EBMUD Main Wastewater Plant
Engine Thermal Throughput - Thermal Mass Meter, Common Engine Digester Gas Line**

July 1 - December 31, 2017

		Data Source	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Semi-annual Totals	Limits
Turbine Operation										
Run Time	Total hrs	metered	133	544	712	612	694	597	3,292	
Digester Gas	Total cu ft	metered	7,639,599	31,931,202	41,023,204	35,389,088	39,019,623	39,216,066	194,218,703	MMBTU/HHV per 12-Month period
Thermal	Total MMBTU/hr		4,700	21,137	26,742	23,135	25,921	25,932	127,587	389,820
Throughput ³	Total MMBTU/hr		35.4	38.8	37.6	37.8	37.4	43.4	x	
Nitrogen Oxide ⁴	Max ppm	sampled	-	1.8	9.1	11.7	13.3	3.6	x	23 ppm at any time
Carbon Monoxide ⁴	Max ppm	sampled	-	1.8	16.4	30.7	41.2	1.8	x	100 ppm at any time
Sulfur Dioxide ⁴	Max ppm	sampled	-	3.6	5.9	10.9	9.1	5.6	x	150 ppm at any time
Nitrogen Oxide	Total lbs	calc'd	Last annual source test mass flow rate (lbs/hr) x last 12 mo run time (hrs)----->					4,103	34,400	lbs per 12-Month period
Carbon Monoxide	Total lbs	calc'd	Last annual source test mass flow rate (lbs/hr) x last 12 mo run time (hrs)----->					746	92,200	Month period
Engine Operation										
Run Time	Eng #1 hrs	metered	744	701	434	478	469	605	3,431	
	Eng #2 hrs	metered	-	57	688	541	328	-	1,614	
	Eng #3 hrs	metered	-	728	616	314	446	603	2,784	
	Total hrs	sum	1,472	1,374	1,189	1,333	1,243	1,208	7,829	25,316 hr/365 days
Diesel Fuel ¹	Eng #1 gal	calc'd	1,050	1,144	841	898	821	1,213	5,966	
	Eng #2 gal	calc'd	-	237	1,056	933	-	432	-	2,657
	Eng #3 gal	calc'd	-	1,120	1,072	-	-	-	-	1,050
	Total gal	sum	2,170	2,453	2,100	2,561	2,247	2,303	13,834	150,000 gal/365 days
Digester Gas ²	Eng #1 cu ft	metered	26,794,557	24,010,505	14,798,790	16,654,227	16,246,156	21,001,491	119,505,726	
	Eng #2 cu ft	metered	-	2,041,902	24,341,822	19,069,427	11,544,096	-	56,997,247	
	Eng #3 cu ft	metered	-	26,398,528	21,650,247	2,635,088	10,431,514	14,731,227	95,973,392	
Thermal	Total MMBTU/hr	sum	53,193,086	47,702,654	41,775,700	46,155,167	42,521,479	41,128,181	272,476,265	25 MMBTU/hr
Throughput ³	Eng #2 MMBTU/hr		22.4	22.9	22.5	23.0	23.3	23.3	232	x
Natural Gas	Total cu ft	metered	-	-	24.3	23.3	23.3	23.6	-	25 MMBTU/hr
Boiler Operation										
Run Time	Boiler hrs	metered	577	233	36	11	31	224	1,111	
Digestor Gas	Boiler cu ft	metered	7,980,170	3,361,634	504,497	135,186	440,922	3,302,781	15,725,189	20,411 MMBTU/hr
Thermal Thruput ³	Boiler MMBTU/hr		8.5	9.6	9.2	8.0	9.5	9.8	x	20,411 MMBTU/hr
Flare Operation (A-190,191,192,193)										
Run Time	Flares hrs	metered	-	465	580	633	646	-	-	
Digestor Gas	Flares cu ft	metered	37,561,602	15,941,324	11,063,332	16,878,881	11,940,826	15,429,137	108,815,102	
Thermal Thruput ³	Flares MMBTU/hr		35.6	22.7	12.4	17.4	12.3	15.7	x	
Flare Operation (A-194,195)										
Run Time	Flares hrs	metered	3	1	-	3	10	-	-	
Digestor Gas	Flares cu ft	metered	92,802	42,340	-	72,485	435,160	-	642,787	
Thermal Thruput ³	Flares MMBTU/hr		21	19	-	15.4	29.0	-	x	
Max Total Flow	Flares scfm	metered	906	484	-	460	924	-	x	3,000 scfm
Digestor Gas HHV	Grab BTU/scf	sampled	6.15	6.62	6.52	6.54	6.64	6.61	x	

(1) Diesel use per engine (gal) = diesel withdrawn from common storage tank daily (gal) x ratio of fuel used per engine (single day tank level / sum of all day tanks)

(2) Digester gas usage (cf) = DOSE/P flow data from common engine line meter (scfm) x minutes of gas flow x (engine hours/sum of engine hours)

(3) Thermal Thruput calculations use High Heat Value of the monthly Digester Gas Sample combined with Diesel High Heat Value of 138,690 BTU/gal or Natural Gas HHV of 1020 BTU/scf as applicable.

(4) Monthly turbine exhaust check - ppm corrected to 15% O2

ATTACHMENT 3

ANNUAL SOURCE TEST RESULTS

- Engine #2 (S-38), 9/21/17 by Blue Sky Environmental
- Engine #3 (S-39), 10/27/17 by Blue Sky Environmental
- Enclosed Flares (A-194, A-195), 11/9/17 by Blue Sky Environmental
- Turbine (S-56), 12/12/17 by Blue Sky Environmental
- Boiler (S-55), 12/20/17 by Blue Sky Environmental

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1
EBMUD
DG TURBINE #1 (S-56)
3908 kW

RUN	1	2	3	AVERAGE	LIMITS
Test Date	12/12/17	12/12/17	12/12/17		
Test Time	1031-1101	1117-1147	1207-1237		
Standard Temp., °F	70	70	70	70	
Turbine kW	3,904	3,892	3,927	3,908	
Turbine BHp	5,231	5,215	5,262	5,236	
Fuel Flow Rate, DSCFM	1,059.0	1,059.0	1,067.0	1,061.7	
Fuel Flow Rate, MMBtu/hr	38.1	38.1	38.2	38.1	
Exhaust Flow Rate, DSCFM (Method 19)	29,963	30,136	28,758	29,619	
Oxygen, O ₂ , %	16.8	16.8	16.6	16.7	
Carbon Dioxide, CO ₂ , %	3.7	3.7	3.7	3.7	
NOx, ppm	2.7	2.6	2.5	2.6	
NOx, ppm @ 15% O₂	3.9	3.7	3.5	3.7	23
NOx, lbs/hr	0.58	0.55	0.52	0.55	
NOx, lbs/MMBtu	0.015	0.014	0.014	0.014	
CO, ppm	1.4	0.9	0.9	1.1	
CO, ppm @ 15% O₂	2.0	1.4	1.3	1.5	100
CO, lbs/hr	0.2	0.1	0.1	0.1	
CO, lbs/MMBtu	0.005	0.003	0.003	0.004	
SO ₂ , ppm	4.2	4.2	4.6	4.3	
SO₂, ppm @ 15% O₂	6.0	6.1	6.3	6.1	150
SO ₂ , lbs/hr	1.3	1.3	1.3	1.3	
SO ₂ , lbs/MMBtu	0.03	0.03	0.03	0.03	
THC, ppm	<0.6	<0.6	<0.6	<0.6	
THC, lbs/hr as CH ₄	<0.04	<0.04	<0.04	<0.04	
CH ₄ , ppm	<0.6	<0.6	<0.6	<0.6	
TNMHC, ppm as CH ₄	<0.6	<0.6	<0.6	<0.6	
TNMHC, ppm @ 15% O ₂	<0.9	<0.9	<0.8	<0.8	
TNMHC, lbs/hr as CH ₄	<0.04	<0.04	<0.04	<0.04	
TNMHC, lbs/MMBtu as CH ₄	<0.001	<0.001	<0.001	<0.001	

WHERE,

ppm = Parts Per Million Concentration

Lbs/hr = Pound Per Hour Emission Rate

Tstd. = Standard Temp. (°R = °F+460)

MW = Molecular Weight

DSCFM = Dry Standard Cubic Feet Per Minute

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

THC = Total Hydrocarbons as Methane (MW = 16)

TNMHC = Total Non-Methane Hydrocarbons as Methane (MW = 16)

SO₂ - Sulfur Dioxide (MW=64.1)

CALCULATIONS,

$$\text{PPM @ 15\% O}_2 = \text{ppm} * 5.9 / (20.9 - \%O_2)$$

$$\text{PPM @ 3\% O}_2 = \text{ppm} * 17.9 / (20.9 - \%O_2)$$

$$\text{Lbs/hr} = \text{ppm} * 8.223 \times 10^{-5} \times \text{DSCFM} \times \text{MW} / \text{Tstd. } ^\circ\text{R}$$

$$\text{Lbs/day} = \text{Lbs/hr} * 24$$

$$\text{Lbs/MMBtu} = \text{Lbs-hr} / \text{MMBtu-hr}$$

BLUE SKY ENVIRONMENTAL, INC

TABLE #2

Method 5 Particulate Emission Test Results
EBMUD
Engine #2 (S-38)
2100 kW

RUN #		1	2	3	AVERAGE	LIMITS
TEST DATE		9/21/17	9/21/17	9/21/17		
TEST TIME		0918-1024	1041-1143	1156-1258		
Generator Kw		2,194	1,983	1,998		
Engine Kw		2,304	2,082	2,098		
Engine BHp-hr		3,087	2,790	2,811		
SAMPLE VOLUME	DSCF	40.762	38.187	39.815		
ISOKINETIC	%	102.9	96.1	98.7	99.2	
DUCT TEMP	°F	374.3	384.3	391.2	383.3	
VELOCITY	Ft/sec	95.14	97.35	99.98	97.49	
FLOW RATE	ACFM	16,497	16,881	17,337	16,905	
FLOW RATE	DSCFM	9,687	9,726	9,867	9,760	
H ₂ O	%	7.81	8.47	8.39	8.22	
O ₂	%	13.50	12.90	12.90	13.10	
CO ₂	%	5.50	6.00	6.00	5.83	
Filiterable Particulate (FP)	mg	4.0	2.4	6.3	4.2	
	gr/DSCF	0.0015	0.0010	0.0024	0.0016	
	lb/hr	0.125	0.081	0.206	0.137	
	lb/24-hr	2.99	1.96	4.94	3.30	
	g/BHp-hr	0.018	0.013	0.033	0.022	0.085

Notes: Less than (<) signs precede the method detection limit.

Particulate Concentration (gr/DSCF) = mg/Vmstd x 0.01543 =

Particulate Emission Rate (lb/hr) = 0.00857 x gr/DSCF x DSCFM =

Particulate Emission Factor (g/BHp-hr) = lb/hr * 453.6 / BHp-hr =

Attachment 4
Gasoline Facility Throughput (S-48)

SD-1 GASOLINE DISPENSING FACILITY

Maintenance Center (4,000 Gal)

As of December 31, 2017

MONTH	GALLONS RECEIVED	RECEIVED YR-TO-DATE	GALLONS ISSUED	ISSUED YR-TO-DATE	COMMENTS
JAN 17	2777	2777	2851	2851	
FEB 17	1927	4704	2560	5411	
MAR 17	2000	6704	2217	7628	
APR 17	1533	8237	1457	9085	
MAY 17	2615	10852	2304	11389	
JUN 17	1750	12602	1153	12542	
JUL 17	2400	15002	1797	14339	
AUG 17	2775	17777	2544	16883	
SEP 17	2659	20436	2279	19162	
OCT 17	2524	22960	2370	21532	
NOV 17	2469	25429	2464	23996	
DEC 17	1175	26604	2369	26365	
Total		26604		26365	

 GETTLER-RYAN INC.

FORM 1

GR Job #

17204175.6

SUMMARY OF SOURCE TEST DATA

SOURCE INFORMATION		FACILITY PARAMETERS	
GDF Name and Address EBMUD: Wastewater Treatment Plant 2020 Wake Ave, Oakland	GDF Representative and Title GDF Phone No.	PHASE II SYSTEM TYPE (Check One)	
Permit Conditions	Source; GDF Vapor Recovery System N/A GDF #	Balance Hirt Red Jacket Hasstech Healy Other	<input checked="" type="checkbox"/> X
	A/C #	Manifolded?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Operating Parameters			
Number of Nozzles Served by Tank #1		Number of Nozzles Served by Tank #3	
Number of Nozzles Served by Tank #2		Number of Nozzles Served by Tank #4	
Applicable Regulations:		Executive Orders VR-201-M and VR-202-M VN Recommended	
Source Test Results and Comments			
Tank #:			
1. Product Grade	<u>87</u>		
2. Actual Tank Capacity, gallons	<u>3000</u>		
3. Gasoline Volume	<u>1374</u>		
4. Ullage, gallons (#2-#3)	<u>1626</u>		
5. Initial Pressure, inches H ₂ O	<u>2.00</u>		
6. Pressure After 1 Minute, inches H ₂ O	<u>1.98</u>		
7. Pressure After 2 Minutes, inches H ₂ O	<u>1.98</u>		
8. Pressure After 3 Minutes, inches H ₂ O	<u>1.99</u>		
9. Pressure After 4 Minutes, inches H ₂ O	<u>1.98</u>		
10. Final Pressure After 5 Minutes, inches H ₂ O	<u>1.97</u>		
11. Allowable Final Pressure	<u>1.51</u>		
Test Conducted by: Elodio Sanchez ICC 8228369-VT	Test Company: Gettler-Ryan Inc.	Date of Test: 11/6/2017	

California Air Resource Board

March 17, 1999

TP-201.3, Page 14

ATTACHMENT 5**Hours of Operation for Stand-by Emergency Generators****July 1, 2017 – December 31, 2017**

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	137.9	138.0	0	0.1	30
S-51	Dechlorination	692.4	697.1	1.2	3.5	50
S-53	West of Admin Bldg	99.7	105.9	0	6.2	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	14.4	15.6	0	1.2	50

January 1, 2017 – June 30, 2017

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	137.9	137.9	0	0	30
S-51	Dechlorination	686.5	692.4	0	5.9	50
S-52	North of Maintenance			Source Removed from Site and Permit 6/2/2017		
S-53	West of Admin Bldg	99.1	99.7	0	0.6	30
S-54	East Bayshore RWP	35	36	0	1	50
S-58	North of Maintenance	13.5	14.4	0	0.9	50

January 1, 2017 – December 31, 2017 (last 12 months total)

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	137.9	138.0	0	0.1	30
S-51	Dechlorination	686.5	697.1	1.2	9.4	50
S-52	North of Maintenance			Source Removed from Site and Permit 6/2/2017		
S-53	West of Admin Bldg	99.1	105.9	0	6.8	30
S-54	East Bayshore RWP	35	36	0	1	50
S-58	North of Maintenance	13.5	15.6	0	2.1	50

ATTACHMENT 6

DIESEL DELIVERIES WITH SULFUR CONTENT CERTIFICATIONS

Note: Diesel is delivered by two suppliers. Delivery receipts from this reporting period are supplied in this Attachment. All deliveries met the same criteria.

Hunt & Sons Inc.: Max Sulfur Content 15 ppm, confirmed by company (Antioch dispatcher) verbally by phone on January 28, 2014. CARB ULSD is noted on the invoice/receipt which meets this requirement

Valley Oil Co.: Max Sulfur Content 15ppm, noted on the invoice/receipt

VALLEY OIL CO.

882522

785 YUSA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94042
(650) 967-2255

REMIT PAYMENTS TO:
LOCKBOX #136719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO/PO NO	DATE
DELIVER TO		TIME OF DELIVERY IN OUT

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL, 3. NA 1993, PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESEL FUEL, 3. NA 1993, PG III CARB ULSD 15ppm Sulfur			
	This FCCO lot is CLEO DIESEL FUEL CONVAILABLE USE ONLY. PERMIT FOR TAXABLE USE. This fuel meets EPA Rego Penmits for SULFUR, CETANE INDEX, OR AROMATIC CONTENT.			
	GASOLINE, 3. UN 1203, PG II UNLEADED			
	GASOLINE, 3. LN 1203, PG II UNLEADED PLUS			
	GASOLINE, 3. UN 1203, PG II PREMIUM UNLEADED			
	GASOLINE FEDERAL EXCISE TAX			
	GASOLINE STATE USE TAX			
	DELIVERY/FREIGHT/HANDLING FEE			
	CA AB 32 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL SALES TAX PREPAY SG GH 78-005855			
	GASOLINE SALES TAX PREPAY SG GH 78-005855			

Customer agrees to pay all taxes, fees, charges, and costs, including, but not limited to, sales tax, excise tax, environmental fees, recycling fees, and other taxes, fees, charges, and costs, imposed by any federal, state, or local government authority, agency, or political subdivision, and/or its agents, employees, contractors, and service providers, in connection with the sale, delivery, use, or removal of the products, services, and/or equipment described in this document.

CREDIT TERMS: NET 10 DAYS. The unpaid balance remaining 10 days after the delivery date is subject to a service charge of 1% per month, or the equivalent thereof, plus a late fee of 10 cents per day, or the equivalent thereof, plus a minimum late fee of \$10.00. Credit approval is required prior to delivery. These credit terms apply to accounts receivable created prior to January 1, 1991.

SUB-TOTAL

<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO. _____	<input type="checkbox"/> CHARGE	% SALES TAX
DRUM DEPOSIT	DELIVERED	RETURNED	NET CHANGE
X			TOTAL →

POSTED _____

X

VALLEY OIL CO.

785 YUBA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94042
(650) 967-2253

REMIT PAYMENTS TO:
LOCKBOX #138719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



VALERO



TELEPHONE	JOB NO./PC NO	DATE
DELIVER TO		TIME OF DELIVERY IN: OUT:

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL, 3. NA 1993, PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESEL FUEL, 3. NA 1993, PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL, 3. NA 1993, PG III CARB ULSD 15ppm Sulfur			
	GASOLINE, 3. UN 1203, PG II UNLEADED			
	GASOLINE, 3. UN 1203, PG II UNLEADED PLUS			
	GASOLINE, 3. UN 1203, PG II PREMIUM UNLEADED			
	GASOLINE FEDERAL EXCISE TAX			
	GASOLINE STATE USE TAX			
	DELIVERY FREIGHT HANDLING FEE			
	CA AB 32 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL SALES TAX PREPAY SG GH 78-005856			
	GASOLINE SALES TAX PREPAY SG GH 78-005856			
<small>TERMS: NET 10 DAYS. The unpaid balance remaining 10 days after the due date will bear interest at a rate of 1% per month or the maximum percentage rate allowed by law. Interest will accrue on the unpaid balance until paid in full. This charge is in addition to any other charges including late fees, service fees, taxes, and other amounts due. This charge is non-refundable. This charge is non-cancellable. This charge is non-negotiable. This charge is non-discretionary. This charge is non-optional. This charge is non-refundable. This charge is non-negotiable. This charge is non-discretionary. This charge is non-optional.</small>				
				SUB-TOTAL
<input type="checkbox"/> CASH <input type="checkbox"/> CHECK NO. _____	<input type="checkbox"/> CHARGE	% SALES TAX		
DRUM DEPOSIT	DELIVERED	RETURNED	VET CHANGE	
X <i>Ril</i>	7/20/17	15136	TOTAL	_____
CUSTOMER'S SIGNATURE: _____				

POSTED _____

X

VALLEY OIL CO.

765 YUBA DRIVE, OFF EL CAJON ROAD
MOUNTAIN VIEW, CA 94031
(415) 967-2233

REMIT PAYMENTS TO:
LOCKBOX #109719
BOSC OIL INC DBA VALLEY OIL
PO BOX 385718
SAN FRANCISCO, CA 94139-8719



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO / PO NO	DATE
DELIVER TO		TIME OF DELIVERY IN OUT

FTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL 3 LVA 1993 PG E			
	CARB ULSO 15ppm Sulfur			
	DIESEL FUEL FEDERAL 900572A			
	DIESEL FUEL STATE 1A 14			
	DIESEL FUEL STATE 1A 14			
	DIESEL FUEL STATE 1A 14			
	GASOLINE 3 UNL			
	UNLEADED			
	GASOLINE 3 UNL UNLEADED PLUS			
	GASOLINE PREMIUM UNLEADED			
	ASCO TERRAPAL			
	ASCO TERRAPAL			

DELIVER TO / ACCT. NO.			
CASH FEE		.0000	
ENCL. FAIR FEE		.0075	
CALIFORNIA STATE SALES TAX STORM TAX PER		.12	
CALIFORNIA FED SALES TAX		.00	
DIESEL SALES T-FAIRPAH SBCH70855		.00	
GASOLINE SALES T-FAIRPAH SBG-7005855		.00	

CREDIT TERMS: NET 10 DAYS.			SUB-TOTAL
<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO.	<input type="checkbox"/> CHARGE	% SALES TAX
DRUM DEPOSIT	PAID REC'D.	RETURNED	NET CHANGE
X			TOTAL

POSTED _____

X _____ APPROVAL SIGNATURE

VALLEY OIL CO.

785 YUBA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94032
(650) 967-2253

REMIT PAYMENTS TO:
LOCKBOX #138719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO./P.O. NO.	DATE
DELIVER TO		TIME OF DELIVERY IN: / OUT:

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL 3 NA 1993 PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESPI FUEL 3 NA 1993 PG IV - 151120 GUL 15ppm Sulfur			
	GASOLINE 100% LEAD UNLEADED			
	GASOLINE 100% LEAD UNLEADED PLUS			
	3-5 STAR - UN 100% LEAD Premium Unleaded			
	GASOLINE FEDERAL EXCISE TAX			
	STATE USE TAX			
	DELIVER FEE GHT HANDLING FEE			
	CA AB 02 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL SALES TAX PREPAY SG CH 78-C05935			
	GASOLINE SALES TAX PREPAY SG CH 78 C03855			
CREDIT TERMS: NET 10 DAYS.				
				SUB-TOTAL
<input type="checkbox"/> CASH <input type="checkbox"/> CHECK NO. <input type="checkbox"/> CHARGE		% SALES TAX		
DRUM DEPOSIT	DELIVERED RETURNED	NET CHANGE		
X		TOTAL		

POSTED _____

X _____

HUNT & SONS, INC.

P.O. BOX 277670 · SACRAMENTO, CA 95827-7670 · (800) 734-2999

SACRAMENTO · (916) 383-4668	ANTIOCH · (925) 755-3835
PLACERVILLE · (530) 622-1551	BENICIA · (707) 747-9500
GRASS VALLEY · (530) 273-6925	RENO · (775) 323-1866
CHICO · (530) 342-8376	SAN ANDREAS · (209) 754-3550
QUINCY · (530) 283-1080	SONORA · (209) 536-0767
WILLOWS · (530) 934-4767	IONE · (209) 274-2470

NUMBER

ACCOUNT NUMBER:

DATE

JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

SHIP TO:

—SOLD TO:

HWD

25

NO. OF PKG'S	BULK OR PKG. SIZE	PRODUCT DELIVERED	ORDERED	DELIVERED	TAXES			PRICE	AMOUNT
					FED	STATE	SALES		

PRODUCT				Load Time:	Start:	SALES	
AFTER				Arrived:	Finish:	TAX	
BEFORE				Unload Time:	Start:	SUB	
DELIVERED				Arrived:	Finish	TOTAL	

CUSTOMER AGREES TO PAY FINANCE CHARGE ON PAST DUE BALANCE OF 1.8% PER MONTH OR THE MAXIMUM RATE ALLOWED IN CUSTOMER'S STATE OF RESIDENCE, WHICHEVER IS LESS; AND FURTHER AGREES TO PAY REASONABLE ATTORNEY'S FEES AND COSTS IF COLLECTION IS REQUIRED. VENUE FOR ENFORCEMENT OF THIS OBLIGATION SHALL BE SACRAMENTO COUNTY.

NUMBER OF DRUMS DELIVERED
NUMBER OF DRUMS RETURNED

GRAND TOTAL

ALL CLAIMS FOR ENVIRONMENTAL DAMAGE DURING DELIVERY OF ANY PRODUCT MUST BE MADE WITHIN 15 DAYS FOLLOWING DELIVERY.	CHECK NUMBER	CHECK AMOUNT
--	-----------------	-----------------

DELIVERED BY (SIGNATURE IN FULL)	RECEIVED IN GOOD ORDER	PLEASE PAY FROM THIS INVOICE.
----------------------------------	------------------------	-------------------------------

15136 9/7/17

VALLEY OIL CO.

785 YUBA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94042
(650) 967-2253

REMIT PAYMENTS TO:
LOCKBOX #138719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 396719
SAN FRANCISCO CA 94139-6719

DELIVERY RECEIPT



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO./PC NO.	DATE
DELIVER TO		TIME OF DELIVERY IN OUT

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL 3. UN 1993. PG III CARB ULSO 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESEL FUEL 3. UN 1993. PG II CARB D/E ULSO 15ppm Sulfur			
	THIS PRODUCT IS DIESEL FUEL. IT IS NOT APPROVED FOR USE IN CARB EXCEPT AS LISTED. THIS PRODUCT IS NOT APPROVED FOR USE IN CALIFORNIA. IT IS EXEMPT FROM STATE USE TAX.			
	GASOLINE 3. UN 1203. PG I UNLEADED			
	GASOLINE 3. UN 1203. PG II UNLEADED PLUS			
	GASOLINE 3. UN 1203. PG PREMIUM UNLEADED			
	FEDERAL EXCISE TAX			
	GASOLINE S. ATOM. 4.			
	DELIVERY FEE/HANDLING FEE			
	CA AB 32 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL SALES TAX PREPAY SG GH 78-005855			
	GASOLINE SALES TAX PREPAY SG GH 78-005855			

CREDIT TERMS: NET 10 DAYS. The unpaid balance remaining 10 days after the due date is subject to a service charge of 1% per month or the annual percentage rate of 18%, whichever is greater. The minimum monthly service charge is \$10.00. Minimum monthly service charge is \$10.00. The minimum monthly service charge is \$10.00.

SUB-TOTAL

<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO. _____	<input type="checkbox"/> CHARGE	% SALES TAX
DRUM DEPOSIT	DELIVERED	RETURNED	NET CHANGE
X	<i>9/28/11</i>		TOTAL 15136

POSTED _____

X

HUNT & SONS, INC.

P.O. BOX 277670 · SACRAMENTO, CA 95827-7670 · (800) 734-2999

SACRAMENTO · (916) 383-4868	ANTIOCH · (925) 755-3835
PLACERVILLE · (530) 622-1551	BENICIA · (707) 747-9500
GRASS VALLEY · (530) 273-6925	RENO · (775) 323-1866
CHICO · (530) 342-8376	SAN ANDREAS · (209) 754-3550
QUINCY · (530) 283-1080	SONORA · (209) 536-0767
WILLOWS · (530) 934-4767	IONE · (209) 274-2470

NUMBER

ACCOUNT NUMBER:

DATE

SHIP TO:

JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

SOLD TO:

NO. OF PKG'S	BULK OR PKG. SIZE	PRODUCT DELIVERED	ORDERED	DELIVERED	TAXES			PRICE	AMOUNT
					FED	STATE	SALES		

PRODUCT				Load Time:	Start:	SALES TAX	
				Arrived:	Finish:		
AFTER							
BEFORE							
DELIVERED							

CUSTOMER AGREES TO PAY FINANCE CHARGE ON PAST DUE BALANCE OF 1.8% PER MONTH OR THE MAXIMUM RATE ALLOWED IN CUSTOMER'S STATE OF RESIDENCE, WHICHEVER IS LESS; AND FURTHER AGREES TO PAY REASONABLE ATTORNEY'S FEES AND COSTS IF COLLECTION IS REQUIRED. VENUE FOR DISPUTE OR ENDORSEMENT OF THIS OBLIGATION SHALL BE SACRAMENTO COUNTY.

NUMBER OF DRUMS DELIVERED
NUMBER OF DRUMS RETURNED

< >

GRAND TOTAL

ALL CLAIMS FOR ENVIRONMENTAL DAMAGE DURING DELIVERY OF ANY PRODUCT MUST BE MADE WITHIN 15 DAYS FOLLOWING DELIVERY.	CHECK NUMBER	CHECK AMOUNT
DELIVERED BY (SIGNATURE IN FULL)	RECEIVED IN GOOD ORDER	10/12/14 16756

PLEASE PAY FROM THIS INVOICE.

VALLEY OIL CO.

765 YUBA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94042
(650) 967-2253

REMIT PAYMENTS TO:
LOCKBOX #139719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719

DRUMS IN CREDIT



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO / PO NO	DATE
DELIVER TO		TIME OF DELIVERY IN OUT

HTR #

QTY ORD'D OTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL, S. MA 1993, PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL, STATE USE TAX			
	DIESEL FUEL, S. MA 1993, PG III			
	GASOLINE, S. UN 1993, PG I UNLEADED			
	GASOLINE, S. UN 1993, PG I UNLEADED PLUS			
	GASOLINE, S. UN 1993, PG I PREMIUM UNLEADED			
	GASOLINE FEDERAL EXCISE TAX			
	GASOLINE STATE USE TAX			
	CA AB 32 FEE		0032	
	ENVIRONMENTAL FEE		0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL SALES TAX PREPAY SG GH 78-CG3855			
	GASOLINE SALES TAX PREPAY SG GH 78-CG3855			

CREDIT TERMS: NET 10 DAYS. The unpaid balance remaining 10 days after the date of this bill will bear interest at a rate equal to 1 1/2% above the annual percentage rate of 18%.

SUB-TOTAL

<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO.	<input type="checkbox"/> CHARGE	% SALES TAX
DRUM DEPOSIT	DELIVERED	RETURNED	NET CHANGE
X <i>Rita</i>	15736 10/27/17	TOTAL	

X

POSTED

HUNI & SONS, INC.

P.O. BOX 277670 • SACRAMENTO, CA 95827-7670 • (800) 734-2999

SACRAMENTO • (916) 383-4888	ANTIOCH • (925) 755-3835
PLACERVILLE • (530) 622-1551	BENICIA • (707) 747-9500
GRASS VALLEY • (530) 273-6925	RENO • (775) 323-1866
CHICO • (530) 342-8376	SAN ANDREAS • (209) 754-3550
QUINCY • (530) 283-1080	SONORA • (209) 536-0767
WILLOWS • (530) 934-4767	IONE • (209) 274-2470

NUMBER

ACCOUNT NUMBER:

DATE

SHIP TO:

SOLD TO: JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

NO. OF PKG'S	BULK OR PKG. SIZE	PRODUCT DELIVERED	ORDERED	DELIVERED	TAXES			PRICE	AMOUNT
					FED	STATE	SALES		

PRODUCT				Load Time:	Start:	SALES TAX	
AFTER				Arrived:	Finish:		
BEFORE				Unload Time:	Start:	SUB TOTAL	
DELIVERED				Arrived:	Finish:		

CUSTOMER AGREES TO PAY FINANCE CHARGE ON PAST DUE BALANCE OF 1.8% PER MONTH OR THE MAXIMUM RATE ALLOWED IN CUSTOMER'S STATE OF RESIDENCE, WHICHEVER IS LESS; AND FURTHER REES TO PAY REASONABLE ATTORNEY'S FEES AND COSTS IF COLLECTION IS REQUIRED. VENUE FOR JROSSED OR ENDORSEMENT OF THIS OBLIGATION SHALL BE SACRAMENTO COUNTY.

GRAND TOTAL 

ALL CLAIMS FOR ENVIRONMENTAL DAMAGE DURING DELIVERY OF ANY PRODUCT MUST BE MADE WITHIN 15 DAYS FOLLOWING DELIVERY.	CHECK NUMBER	CHECK AMOUNT
--	--------------	--------------

DELIVERED BY [SIGNATURE IN FULL]	RECEIVED IN GOOD ORDER	15136	PLEASE PAY FROM THIS INVOICE.
----------------------------------	------------------------	-------	-------------------------------

11/11/17

VALLEY OIL CO.

785 YUBA DRIVE, OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94042
(650) 967-2253

REMIT PAYMENTS TO
LOCKBOX #138719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719

RECEIPT



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO/PO NO	DATE
DELIVER TO		TIME OF DELIVERY IN. OUT

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DEL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL 3 NA 1993 PG III CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESEL FUEL 3 NA 1993 PG III CARB ULSD 15ppm Sulfur			
	This product is Grade Diesel fuel. Add 10% Federal Excise Tax for taxable use. This fuel contains EPA Regulated Sulfur Content of 15 PPM. Den. Op. Approval No. 0012			
	GASOLINE 3 UN 1203 PG II UNLEADED			
	GASOLINE 3 UN 1203 PG II UNLEADED PLUS			
	GASOLINE 3 UN 1203 PG II PREMIUM UNLEADED			
	GASOLINE FEDERAL EXCISE TAX			
	GASOLINE STATE USE TAX			
	DEL. BY FREIGHT-HANDLING FEE			
	CA 4B 32 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL PERC. FEE		.24	
	DIESEL SALES TAX PREPAY SG GH 7B-C05655			
	GASOLINE SALES TAX PREPAY SG GH 7B-C05855			

CREDIT TERMS: NET 10 DAYS.

The unpaid balance remaining 10 days after the date of this bill will incur a service charge of \$1.00 per day plus a monthly percentage rate of 1.42% (17.4% annual rate). The minimum service charge is \$1.00 per month. This charge will be applied to the unpaid balance on the first day of each month or on the day the account becomes delinquent.

SUB-TOTAL

<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO.	<input type="checkbox"/> CHARGE	% SALES TAX	
DRUM DEPOSIT	DELIVERED	RETURDED	NET CHANGE	
X	15136 11/20/17		TOTAL	

POSTED _____

X

OWNER'S SIGNATURE

HUNT & SONS, INC.

P.O. BOX 277670 • SACRAMENTO, CA 95827-7670 • (800) 734-2999

SACRAMENTO • (916) 383-4868	ANTIOCH • (925) 755-3835
PLACERVILLE • (530) 622-1551	BENICIA • (707) 747-9500
GRASS VALLEY • (530) 273-6925	RENO • (775) 323-1866
CHICO • (530) 342-8376	SAN ANDREAS • (209) 754-3550
QUINCY • (530) 283-1080	SONORA • (209) 536-0767
WILLOWS • (530) 934-4767	IONE • (209) 274-2470

NUMBER

DATE

ACCOUNT NUMBER:

SHIP TO:

SOLD TO:

JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

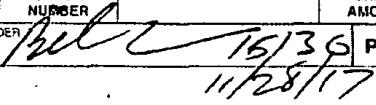
NO. OF PKG'S	BULK OR PKG. SIZE	PRODUCT DELIVERED	ORDERED	DELIVERED	TAXES			PRICE	AMOUNT
					FED	STATE	SALES		

PRODUCT				Load Time:	Start.	SALES TAX	
AFTER				Arrived:	Finish.		
BEFORE				Unload Time:	Start:		
DELIVERED				Arrived:	Finish:	SUB TOTAL	

NUMBER OF DRUMS DELIVERED
NUMBER OF DRUMS RETURNED

< >

GRAND TOTAL 

ALL CLAIMS FOR ENVIRONMENTAL DAMAGE DURING DELIVERY OF ANY PRODUCT MUST BE MADE WITHIN 15 DAYS FOLLOWING DELIVERY.	CHECK NUMBER	CHECK AMOUNT
DELIVERED BY (SIGNATURE IN FULL)	RECEIVED IN GOOD ORDER 	PLEASE PAY FROM THIS INVOICE. 11/28/17

VALLEY OIL CO.

9:31:44

785 YUBA DRIVE OFF EL CAMINO REAL
MOUNTAIN VIEW, CA 94032
(650) 967-2253

REMIT PAYMENTS TO:
LOCKBOX #138719
BOSCO OIL INC DBA VALLEY OIL
PO BOX 398719
SAN FRANCISCO, CA 94139-8719



SOLVENTS
LUBE OILS
CARD SYSTEMS
CHEVRON PRODUCTS



TELEPHONE	JOB NO./PO. NO.	DATE
DELIVER TO		TIME OF DELIVERY IN: OUT:

HTR #

QTY ORD'D QTY LOAD	DESCRIPTION	QTY DELL'D	UNIT PRICE	AMOUNT
	DIESEL FUEL 3. UN 1203. PG II CARB ULSD 15ppm Sulfur			
	DIESEL FUEL FEDERAL EXCISE TAX			
	DIESEL FUEL STATE USE TAX			
	DIESEL FUEL 3. UN 1203. PG II CARB ULSD 15ppm Sulfur			
	This product is dyed Diesel fuel. Not available for use only. Penalty for taxable use. This fuel meets EPA requirements for sulfur content of aromatic content.			
	GASOLINE 3. UN 1203. PG II UNLEADED			
	GASOLINE 3. UN 1203. PG II UNLEADED PLUS			
	GASOLINE 3. UN 1203. PG II PREMIUM UNLEADED			
	GASOLINE FEDERAL EXCISE TAX			
	GASOLINE STATE USE TAX			
	DELIVERY FREIGHT/HANDLING FEE			
	CA AB 32 FEE		.0032	
	ENVIRONMENTAL FEE		.0075	
	CALIFORNIA UNDERGROUND STORAGE TANK FEE		.02	
	CALIFORNIA OIL RECYCLING FEE		.24	
	DIESEL: SALES TAX PREP SG GH 78-015535			
	GASOLINE: SALES TAX PREP SG GH 78-015535			

CREDIT TERMS: NET 10 DAYS.

To receive a balance refunding 10% of the amount paid in advance.

SUB-TOTAL

<input type="checkbox"/> CASH	<input type="checkbox"/> CHECK NO.	<input type="checkbox"/> CHARGE	% SALES TAX
DRUM DEPOSIT	REFUNDED	NET PAID	NET CHANGE

X

MUNI & SONS, INC.

P.O. BOX 277670 · SACRAMENTO, CA 95827-7670 · (800) 734-2999

SACRAMENTO · (916) 383-4888	ANTIOCH · (925) 755-3835
PLACERVILLE · (530) 622-1551	BENICIA · (707) 747-9500
GRASS VALLEY · (530) 273-6925	RENO · (775) 323-1866
CHICO · (530) 342-8376	SAN ANDREAS · (209) 754-3550
QUINCY · (530) 283-1080	SONORA · (209) 536-0767
WILLOWS · (530) 934-4767	IONE · (209) 274-2470

NUMBER

DATE

ACCOUNT NUMBER:

SHIP TO:

SOLD TO:

JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

NO. OF PKG'S	BULK OR PKG. SIZE	PRODUCT DELIVERED	ORDERED	DELIVERED	TAXES			PRICE	AMOUNT
					FED	STATE	SALES		

PRODUCT				Load Time:	Start:	SALES TAX	>		
				Arrived.	Finish:				
AFTER				Arrived.					
				Finish:					
BEFORE				Unload Time:		SUB TOTAL	<		
				Start:					
DELIVERED				Arrived.		NUMBER OF DRUMS DELIVERED	>		
				Finish:					

CUSTOMER AGREES TO PAY FINANCE CHARGE ON PAST DUE BALANCE OF 1.8% PER MONTH OR THE MAXIMUM RATE ALLOWED IN CUSTOMER'S STATE OF RESIDENCE, WHICHEVER IS LESS; AND FURTHER AGREES TO PAY REASONABLE ATTORNEY'S FEES AND COSTS IF COLLECTION IS REQUIRED. VENUE FOR ENFORCEMENT OF THIS OBLIGATION SHALL BE SACRAMENTO COUNTY.

GRAND TOTAL 

ALL CLAIMS FOR ENVIRONMENTAL DAMAGE DURING DELIVERY OF ANY PRODUCT MUST BE MADE WITHIN 15 DAYS FOLLOWING DELIVERY.	CHECK NUMBER	CHECK AMOUNT
DELIVERED BY (SIGNATURE IN FULL)	RECEIVED IN GOOD ORDER	15136 12/14/11

PLEASE PAY FROM THIS INVOICE.

ATTACHMENT 7

TURBINE MONTHLY TEST RESULTS

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1

EBMUD-AUG-2017
DG TURBINE #1 (S-56)
3901 kW

RUN	1	LIMITS
Test Date	8/8/17	
Test Time	1451-1506	
Turbine kW	3901 kW	
Fuel Flow Rate, DSCFM	1,083	
Oxygen, O ₂ , %	2.3	
NOx, ppm	5.8	
NOx, ppm @ 15% O ₂	1.8	23
CO, ppm	5.7	
CO, ppm @ 15% O ₂	1.8	100
SO ₂ , ppm	3.6	
SO ₂ , ppm @ 15% O ₂	1.2	150

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

$$\text{PPM} @ 15\% \text{ O}_2 = \text{ppm} * 5.9 / (20.9 - \% \text{O}_2)$$

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1
EBMUD-SEPTEMBER
DG TURBINE #1 (S-56)
3503 kW

RUN	1	LIMITS
Test Date	9/8/17	
Test Time	1245-1300	
Turbine kW	3,503	
Fuel Flow Rate, DSCFM	949	
Oxygen, O ₂ , %	16.5	
NOx, ppm	6.8	
NOx, ppm @ 15% O ₂	9.1	23
CO, ppm	12.2	
CO, ppm @ 15% O ₂	16.4	100
SO ₂ , ppm	4.4	
SO ₂ , ppm @ 15% O ₂	5.9	150

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O₂ = ppm * 5.9 / (20.9 - %O₂)

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1

EBMUD-OCTOBER
DG TURBINE #1 (S-56)
3496 kW

RUN	1	LIMITS
Test Date	10/12/17	
Test Time	1215-1230	
Turbine kW	3,496	
Fuel Flow Rate, DSCFM	961	
Oxygen, O ₂ , %	16.5	
NOx, ppm	8.7	
NOx, ppm @ 15% O ₂	11.7	23
CO, ppm	22.9	
CO, ppm @ 15% O ₂	30.7	100
SO ₂ , ppm	8.1	
SO ₂ , ppm @ 15% O ₂	10.9	150

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

$$\text{PPM} @ 15\% \text{ O}_2 = \text{ppm} * 5.9 / (20.9 - \% \text{ O}_2)$$

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1
EBMUD-NOVEMBER
DG TURBINE #1 (S-56)
3472 kW

RUN	1	LIMITS
Test Date	11/10/17	
Test Time	1205-1220	
Turbine kW	3,472	
Fuel Flow Rate, DSCFM	967	
Oxygen, O ₂ , %	16.6	
NOx, ppm	9.7	
NOx, ppm @ 15% O ₂	13.3	23
CO, ppm	30.0	
CO, ppm @ 15% O ₂	41.2	100
SO ₂ , ppm	6.6	
SO ₂ , ppm @ 15% O ₂	9.1	150

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

$$\text{PPM} @ 15\% \text{O}_2 \approx \text{ppm} * 5.9 / (20.9 - \% \text{O}_2)$$

BLUE SKY ENVIRONMENTAL, INC

TABLE # 1

EBMUD-DECEMBER
DG TURBINE #1 (S-56)
3909 kW

RUN	1	LIMITS
Test Date	12/12/17	
Test Time	1000-1015	
Turbine kW	3,909	
Fuel Flow Rate, DSCFM	1,063	
Oxygen, O ₂ , %	16.6	
NOx, ppm	2.6	
NOx, ppm @ 15% O ₂	3.6	23
CO, ppm	1.3	
CO, ppm @ 15% O ₂	1.8	100
SO ₂ , ppm	4.1	
SO ₂ , ppm @ 15% O ₂	5.6	150

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO₂ (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO₂ = Sulfur Dioxide (MW= 64)

CALCULATIONS,

$$\text{PPM} @ 15\% \text{ O}_2 = \text{ppm} * 5.9 / (20.9 - \% \text{O}_2)$$

ATTACHMENT 8

**MAIN WASTEWATER TREATMENT
PLANT FLOWS**

East Bay Municipal Utility District
ANNUAL WASTEWATER MONITORING SUMMARY 2017

STATION: WWTP INFLUENT - INF-001
STATION: WWTP EFFLUENT - EFF-001
FLows & CONVENTIONAL POLLUTANTS (R2-2015-0018)

STATION: WWTP INFLUENT - INF-001
 STATION: WWTP EFFLUENT - EFF-001
 FLOWS & CONVENTIONAL POLLUTANTS (R2-2015-0018)

INFLUENT (MGD)	EFFLUENT (MGD)	CBOD						TSS						Oil and Grease					
		Inf (INF-001)			Eff mg/L			# excs/ # of Analyses			Inf (INF-001)			Eff mg/L					
		Max	Min	3-mo Dry	Max	Min	Dry	Month	Week	Mo.	Week	Month	Week	Mo.	Week	Month	Mo.		
Mo.	Daily	Daily	Season	Mo.	Daily	Season	Mo.	Week	Mo.	Week	Month	Week	Mo.	Week	Month	Mo.	Week		
Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg		
Limits:	120							25	40		Min 85	30	45		Min 85	10	20		
Jan	118	232	56	112	214	48	151	9	14	0/1	0/4	94%	255	14	19	0/1	0/4	94%	
Feb	122	208	67	118	212	61	150	13	15	0/1	0/4	92%	284	14	16	0/1	0/4	95%	
Mar	83	139	54	80	139	56	183	11	13	0/1	0/4	94%	338	11	15	0/1	0/4	97% < 2.3	
Apr	73	126	56	71	126	53	218	5	7	0/1	0/5	98%	336	8	9	0/1	0/5	98%	
May	54	62	49	52	58	46	302	10	15	0/1	0/4	97%	368	13	20	0/1	0/4	96% < 2.2	
Jun	52	57	45	48	54	43	397	7	13	0/1	0/4	98%	435	11	20	0/1	0/4	98%	
Jul	48	50	45	47	50	43	351	8	10	0/1	0/5	98%	384	12	15	0/1	0/5	97% < 2.3 < 2.2	
Aug	48	52	44	47	51	42	346	7	9	0/1	0/4	98%	379	11	13	0/1	0/4	97% < 2.2	
Sep	48	51	45	48	47	51	43	341	8	11	0/1	0/5	98%	423	10	11	0/1	0/5	98% < 2.3
Oct	47	53	43	45	52	41	357	8	10	0/1	0/5	98%	414	11	12	0/1	0/4	97% < 2.2 < 2.2	
Nov	57	123	46	52	120	43	309	10	11	0/1	0/4	97%	353	12	13	0/1	0/4	97% < 2.2 < 2.2	
Dec	50	56	44	46	51	41	329	8	13	0/1	0/5	98%	402	11	15	0/1	0/5	97% 4x/year	
Avg	67	101	50	64	98	47	286	9	12			96%	364	11	15			97% 2.4	
Max	122	232	67	118	214	61	397	13	15			98%	435	14	20			98% 3.1	
Min	47	50	43	45	50	41	150	5	7			92%	255	8	9			94% < 2.2 < 2.2	
Exc/Analyses								0/12	0/52				0/12	0/52	0/12			0/6 0/12*	

E=estimated value

Exc / Analyses = number of exceedances / number of analyses

*O&G samples: 3 in Jan 2017, 4 in Feb 2017, 2 in March 2017

ATTACHMENT 9 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

pg 1 of 4

Coarse Scrubber Inlet Avg	Fine Scrubber Inlet Avg	Fine Scrubber Outlet Max	Coarse Scrubber Inlet Max	Fine Scrubber Outlet Max
01-Jul-17	0.0	0.0	0.0	0.0
02-Jul-17	0.1	0.0	0.1	0.0
03-Jul-17	0.1	0.0	0.1	0.0
04-Jul-17	0.1	0.0	0.1	0.0
05-Jul-17	0.1	0.0	0.0	0.0
06-Jul-17	0.1	0.0	0.1	0.0
07-Jul-17	0.1	0.0	0.0	0.0
08-Jul-17	0.1	0.0	0.1	0.0
09-Jul-17	0.1	0.0	0.1	0.0
10-Jul-17	0.1	0.0	0.1	0.0
11-Jul-17	0.3	0.0	0.0	0.0
12-Jul-17	0.2	0.0	0.3	0.0
13-Jul-17	0.1	0.0	0.2	0.0
14-Jul-17	0.5	0.0	0.8	0.0
15-Jul-17	0.1	0.0	1.7	0.0
16-Jul-17	0.1	0.0	0.1	0.0
17-Jul-17	0.8	0.0	0.8	0.0
18-Jul-17	0.2	0.0	0.2	0.0
19-Jul-17	0.1	0.0	1.7	0.0
20-Jul-17	0.1	0.0	1.6	0.0
21-Jul-17	0.1	0.0	1.7	0.0
22-Jul-17	0.1	0.0	0.0	0.0
23-Jul-17	0.1	0.0	0.1	0.0
24-Jul-17	0.1	0.0	0.1	0.0
25-Jul-17	0.1	0.0	0.0	0.0
26-Jul-17	0.2	0.0	0.0	0.0
27-Jul-17	0.1	0.0	0.0	0.0
28-Jul-17	0.3	0.0	3.3	0.0
29-Jul-17	0.2	0.0	0.0	0.0
30-Jul-17	0.1	0.0	0.1	0.0
31-Jul-17	0.1	0.0	0.0	0.0

Monthly Avg 0.1 0.0 0.0 0.0 0.0
 Monthly Max 0.1 0.0 0.4 0.0 0.0

Coarse Scrubber Inlet Avg	Fine Scrubber Inlet Avg	Fine Scrubber Outlet Max	Coarse Scrubber Inlet Max	Fine Scrubber Outlet Max
01-Aug-17	0.0	0.2	0.0	0.0
02-Aug-17	0.1	0.0	0.0	0.0
03-Aug-17	0.0	0.0	0.0	0.0
04-Aug-17	0.2	0.0	0.0	0.0
05-Aug-17	0.3	0.0	0.0	0.0
06-Aug-17	0.1	0.0	0.0	0.0
07-Aug-17	0.1	0.0	0.0	0.0
08-Aug-17	0.1	0.0	0.0	0.0
09-Aug-17	0.1	0.0	0.0	0.0
10-Aug-17	0.1	0.0	0.0	0.0
11-Aug-17	0.1	0.0	0.0	0.0
12-Aug-17	0.1	0.0	0.0	0.0
13-Aug-17	0.1	0.0	0.0	0.0
14-Aug-17	0.2	0.0	0.0	0.0
15-Aug-17	0.1	0.0	0.0	0.0
16-Aug-17	0.3	0.0	0.0	0.0
17-Aug-17	0.1	0.0	0.0	0.0
18-Aug-17	0.2	0.0	0.0	0.0
19-Aug-17	0.1	0.0	0.0	0.0
20-Aug-17	0.1	0.0	0.0	0.0
21-Aug-17	0.1	0.0	0.0	0.0
22-Aug-17	0.1	0.0	0.0	0.0
23-Aug-17	0.1	0.0	0.0	0.0
24-Aug-17	0.2	0.0	0.0	0.0
25-Aug-17	0.1	0.0	0.0	0.0
26-Aug-17	0.1	0.0	0.0	0.0
27-Aug-17	0.1	0.0	0.0	0.0
28-Aug-17	0.1	0.0	0.0	0.0
29-Aug-17	4.4	0.0	0.0	0.0
30-Aug-17	7.1	0.0	0.0	0.0
31-Aug-17	5.6	0.0	0.0	0.0

Monthly Avg 0.7 0.0 0.0 0.0 0.0
 Monthly Max 22.7 0.4 2.0 0.0 0.0

ATTACHMENT 9 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

pg 2 of 4

Coarse Scrubber Inlet Avg	Fine Scrubber Outlet Avg	Coarse Scrubber Inlet Max	Coarse Scrubber Outlet Max	Fine Scrubber		Coarse Scrubber Inlet Max	Coarse Scrubber Outlet Max	Fine Scrubber Inlet Max	Fine Scrubber Outlet Max
				Inlet Avg	Outlet Avg				
01-Sep-17 7.3	0.0	0.0	-15.2	0.0	0.0	0.0	4.1	0.0	9.5
02-Sep-17 5.1	0.0	0.0	11.9	0.0	0.0	0.0	3.7	0.0	11.6
03-Sep-17 2.9	0.0	0.0	9.3	0.0	0.0	0.0	2.3	0.0	0.3
04-Sep-17 8.6	0.0	0.0	-16.6	0.0	0.0	0.0	2.0	0.0	8.4
05-Sep-17 6.7	0.0	0.0	12.0	0.0	1.5	0.0	3.4	0.0	6.5
06-Sep-17 4.8	0.0	0.0	23.9	0.0	0.0	0.0	4.6	0.0	7.0
07-Sep-17 7.6	0.0	0.0	25.0	0.0	0.0	0.0	2.1	0.0	10.2
08-Sep-17 5.1	0.0	0.0	-11.7	0.3	0.0	0.0	5.3	0.0	12.8
09-Sep-17 7.0	0.0	0.0	20.0	0.3	0.0	0.0	3.3	0.1	10.9
10-Sep-17 5.4	0.0	0.0	10.7	0.0	0.0	0.0	2.2	0.0	15.4
11-Sep-17 4.8	0.0	0.0	17.2	0.0	0.0	0.0	1.5	0.0	9.9
12-Sep-17 4.4	0.0	0.0	14.9	0.0	0.0	0.0	3.1	0.0	7.3
13-Sep-17 6.3	0.0	0.0	-13.1	0.0	0.0	0.0	3.7	0.0	8.0
14-Sep-17 5.7	0.0	0.0	11.1	0.4	0.0	0.0	1.5	0.0	0.4
15-Sep-17 4.7	0.0	0.0	14.1	0.0	0.0	0.0	3.1	0.0	6.9
16-Sep-17 4.7	0.0	0.0	32.3	0.4	0.0	0.0	3.3	0.0	9.7
17-Sep-17 6.1	0.0	0.0	12.3	0.0	0.0	0.0	1.7	0.0	1.6
18-Sep-17 5.7	0.0	0.0	14.1	0.0	4.5	0.0	0.3	0.0	0.0
19-Sep-17 6.3	0.0	0.0	29.1	0.4	0.0	0.0	1.4	0.0	6.1
20-Sep-17 5.5	0.0	0.0	51.2	0.6	0.0	0.0	1.5	0.0	0.3
21-Sep-17 4.7	0.0	0.0	12.1	0.0	0.0	0.0	1.8	0.0	0.0
22-Sep-17 3.9	0.0	0.0	10.2	0.3	0.0	0.0	1.4	0.0	0.0
23-Sep-17 4.3	0.0	0.0	-12.8	0.3	0.0	0.0	2.0	0.0	1.9
24-Sep-17 4.1	0.0	0.0	8.0	0.0	0.0	0.0	5.0	0.1	5.7
25-Sep-17 2.3	0.0	0.0	11.6	0.0	0.0	0.0	4.7	0.1	0.0
26-Sep-17 3.6	0.0	0.0	9.6	0.0	0.0	0.0	4.9	0.0	17.2
27-Sep-17 4.6	0.0	0.0	11.8	0.3	0.0	0.0	3.2	0.0	0.0
28-Sep-17 2.2	0.0	0.0	8.0	0.0	0.0	0.0	1.7	0.0	8.6
29-Sep-17 2.4	0.0	0.0	7.6	0.0	0.0	0.0	2.5	0.1	0.0
30-Sep-17 4.0	0.0	0.0	-13.4	0.3	0.0	0.0	3.9	0.0	12.5
						0.0	2.5	0.0	9.0
						0.0		0.4	1.5
Monthly Avg	5.0	0.0	0.0	51.2	0.6	4.5	0.0	0.0	0.0
Monthly Max						0.0	17.2	0.5	1.6

ATTACHMENT 9 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

pg 3 of 4

Coarse Scrubber Inlet Avg	Coarse Scrubber Outlet Inlet Avg	Fine Scrubber Inlet Avg	Coarse Scrubber Inlet Max	Fine Scrubber Inlet Max	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
					Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max
01-Nov-17 1.8	0.0	0.0	0.0	0.0	9.1	0.4	0.0	0.0	0.0	0.0	9.1	0.0
02-Nov-17 2.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0	0.0	3.6	0.0
03-Nov-17 4.7	0.1	0.0	0.0	0.0	11.6	0.4	0.0	0.0	0.0	0.0	9.3	0.0
04-Nov-17 2.5	0.0	0.0	0.0	0.0	8.0	0.4	0.0	0.0	0.0	0.0	11.4	0.4
05-Nov-17 1.7	0.0	0.0	0.0	0.0	6.7	0.3	0.0	0.0	0.0	0.0	9.7	0.4
06-Nov-17 4.0	0.1	0.0	0.0	0.0	18.1	0.6	10.3	0.3	0.2	0.0	9.6	0.8
07-Nov-17 4.5	0.2	0.0	0.0	0.0	11.7	0.5	0.0	0.0	0.0	0.0	12.5	0.5
08-Nov-17 5.0	0.2	0.0	0.0	0.0	12.0	0.6	0.0	0.0	0.0	0.0	8.0	0.5
09-Nov-17 2.5	0.1	0.0	0.0	0.0	12.1	0.5	0.0	0.0	0.0	0.0	3.9	0.3
10-Nov-17 4.0	0.1	0.0	0.0	0.0	12.0	0.6	0.0	0.0	0.0	0.0	4.7	1.0
11-Nov-17 2.1	0.1	0.0	0.0	0.0	5.2	0.4	0.0	0.0	0.0	0.0	6.5	0.5
12-Nov-17 3.6	0.1	0.0	0.0	0.0	9.8	0.4	0.0	0.0	0.0	0.0	7.4	0.0
13-Nov-17 3.3	0.0	0.0	0.0	0.0	9.3	0.4	0.0	0.0	0.0	0.0	1.7	0.5
14-Nov-17 1.1	0.0	0.0	0.0	0.0	4.9	0.3	0.0	0.0	0.0	0.0	4.1	0.0
15-Nov-17 6.0	0.2	0.0	0.0	0.0	13.4	0.6	0.0	0.0	0.0	0.0	4.8	0.3
16-Nov-17 0.6	0.0	0.0	0.0	0.0	8.2	0.5	0.0	0.0	0.0	0.0	5.5	0.6
17-Nov-17 0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	7.4	0.4
18-Nov-17 0.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	7.1	0.0
19-Nov-17 0.3	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	4.5	0.4
20-Nov-17 1.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	6.1	1.1
21-Nov-17 1.5	0.0	0.0	0.0	0.0	5.8	0.3	0.0	0.0	0.0	0.0	6.5	0.0
22-Nov-17 1.5	0.0	0.0	0.0	0.0	7.6	0.3	0.0	0.0	0.0	0.0	9.8	0.3
23-Nov-17 1.2	0.0	0.0	0.0	0.0	8.9	0.3	0.0	0.0	0.0	0.0	7.2	0.3
24-Nov-17 1.9	0.0	0.0	0.0	0.0	8.1	0.3	0.0	0.0	0.0	0.0	8.3	0.7
25-Nov-17 1.3	0.0	0.0	0.0	0.0	5.4	0.3	0.0	0.0	0.0	0.0	8.1	0.0
26-Nov-17 3.1	0.0	0.0	0.0	0.0	6.0	0.3	0.0	0.0	0.0	0.0	9.8	0.4
27-Nov-17 1.2	0.0	0.0	0.0	0.0	7.5	0.4	0.0	0.0	0.0	0.0	49.9	2.1
28-Nov-17 0.2	0.7	0.0	0.0	0.0	3.7	10.0	0.0	0.0	0.0	0.0	49.9	0.0
29-Nov-17 0.2	1.0	0.0	0.0	0.0	4.2	10.0	0.0	0.0	0.0	0.0	9.5	0.0
30-Nov-17 1.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	7.7	0.6
											5.6	0.0
Monthly Avg	2.1	0.3	0.0	0.0	18.1	10.0	10.3	0.3	3.4	0.0	0.0	49.9
Monthly Max										0.0	0.0	2.1

*Plant shutdown 11/28 affected outlet H2S meter recording on 11/28-11/29

Monthly Avg 2.1 0.3 0.0 0.0 18.1 10.0 10.3 0.3 Monthly Avg 3.4 0.0 0.0 0.0 49.9 2.1 0.0 0.0 0.0
Monthly Max 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

ATTACHMENT 9 -- IPS Scrubber Inlet and Outlet H2S Readings - Related Outages

pg 4 of 4

Influent Pump Station Odor Scrubber Outage Table

Start	Finish	Duration	Reason
23-Jul-17 07:00	23-Jul-17 07:50	0:50	Electrical work requiring both scrubbers to be off. No plant flow, outage not reportable.
19-Nov-17 03:50	19-Nov-17 10:30	6:40	Regeneration water system offline, supply pipe broken. Repaired and returned to service.
30-Nov-17 07:30	30-Nov-17 10:00	2:30	All Exhaust Fans locked out for tie-in of new ductwork.
Total Down Time			<u>7:30</u>

ATTACHMENT 10 - ODOR SCRUBBER MAINTENANCE RECORDS - S-170, S-11C

Headworks Odor Scrubber Maintenance Work Orders Jul - Dec 2017						
Area	Wonum	Description	Assettum	Dept	Status	Type
W-12	2017133127	Exhaust fan #10 off and wont restart	W-12-OCL-001	EL APPR	BD	Report Date 11/9/2017
W-12	2017133215	IPS OCU flush water line is broken at ground level, just east of OCU #1. Please repair the flush water line. W-12-OCL-001 <> There is no way to isolate the flush water to just one of the OCUs. <> So, the flush water is secured to both units until the line is repaired. <> This is a potential air quality issue, so it is a Priority 5 work order.	MEN COMP	BD	11/19/2017	RCHERNIK
W-12	2017133253	IPS H2S reading has been flatlined just below 0 since October 31. Inst. shop please check. Thanx.	W-12-NS-001-02	IN COMP	CM	11/25/2017
W-12	2017146247	Electrical Support for IPS Odor scrubber project	W-12-MISC-000-00	EL APPR	PJ	12/1/2017
W-12	2017146420	ocu #1 (coarse screen) inlet h2s sensor bad reading (problem corrected 12/28/17)	W-12-AT-641	IN COMP	CM	12/27/2017

Thickening/Dewatering Odor Scrubber Maintenance Work Orders Jul - Dec 2017						
Area	Wonum	Description	Assettum	Dept	Status	Type
W-30	2017133123	Compressor Belt Broken The belts for the compressor need to be replaced. <> Operations have 2 belts already please see us to come get them. Blower locked up.	W-30-TKS-301-00	MEN COMP	CM	Report Date 11/9/2017
W-30	2017146404	Dewatering Odor Scrubber #2 Scrubber flow manifold: Hypo leak @ pressure gauge, currently isolated and tagged	MEN WMATL	BD	12/26/2017	SZUBRZYC

ATTACHMENT 11 -- S-170 Waste Activated Sludge Throughput

2017 July - December Gravity Belt Thickener Summary Flow Table

Daily Flows	July	August	September	October	November	December
	Kgal	Kgal	Kgal	Kgal	Kgal	Kgal
1st	1,663	1,395	1,405	1,857	1,814	1,745
2nd	1,728	1,422	2,030	2,041	1,665	1,651
3rd	1,780	1,413	1,890	1,727	1,670	1,784
4th	1,776	1,473	2,043	1,823	1,669	1,654
5th	1,338	1,345	2,025	1,900	1,641	1,386
6th	1,355	1,434	1,747	2,078	1,440	1,388
7th	1,353	1,509	1,933	2,182	1,193	1,457
8th	1,408	1,356	2,150	2,054	1,462	1,543
9th	1,441	1,429	2,015	2,155	1,828	1,460
10th	1,608	1,361	2,157	2,047	1,567	1,488
11th	1,620	1,455	1,686	1,981	1,569	1,439
12th	1,582	1,417	1,612	1,877	1,614	1,514
13th	1,514	1,441	1,687	1,864	1,611	1,400
14th	1,673	1,469	1,672	1,820	1,653	1,330
15th	1,581	1,474	1,613	1,891	2,119	1,276
16th	1,625	1,507	1,775	2,009	1,804	1,411
17th	1,512	1,465	1,725	1,823	1,693	1,132
18th	1,567	1,493	1,901	1,720	1,576	1,525
19th	1,449	1,482	1,675	1,701	1,870	1,746
20th	1,443	1,489	1,831	1,612	1,611	2,164
21st	1,485	1,722	1,818	1,962	2,099	2,140
22nd	1,652	1,497	1,913	1,214	2,158	2,132
23rd	1,024	936	1,874	2,079	2,245	2,172
24th	1,798	2,173	1,899	1,905	2,062	2,129
25th	1,544	2,020	1,965	1,917	2,082	2,199
26th	1,493	1,752	1,830	1,615	1,871	1,992
27th	1,457	2,222	1,612	2,441	1,779	1,788
28th	1,579	2,037	1,943	1,943	1,702	1,706
29th	1,383	1,794	1,713	1,800	2,050	1,385
30th	1,404	1,884	1,828	1,783	1,255	1,225
31st	1,527	1,738		1,893		1,469
Monthly Total	47,362	48,604	54,965	58,714	52,371	50,829
Semi-Annual Total	312,845					

Gravity Belt Thickener and Dewatering Centrifuge Odor Scrubber Outage Table

Start	Finish	Duration	Reason
25-Jul-17 10:00	25-Jul-17 14:50	4:50	DWB Scrubber offline for work on supply fan
09-Nov-17 07:50	09-Nov-17 15:00	7:10	DWB Scrubber offline, broken belts
Total Down Time		<u>12:00</u>	

